MFP

TT-20352

TECHNICAL TIP

Models: MX-M283N/MX-M363N/MX-M453N/MX-M503N
MX-M623N/MX-M753N
MX-4100N/MX-4101N/MX-5001N
MX-2610N/MX-3110N/MX-3610N
MX-4110N/MX-4111N/MX-5110N/MX-5111N

Priority: Medium

Date: October 2011

Subject: **How to Integrate User Control with Active Directory**

Description: This document shows how to integrate User Control with Active Directory Attributes

Details: Follow the steps in this document to get User Control to use Active Directory to set up the MFP so that the Page Limit, Authority and Favorite Operation Groups can each be applied to network users when they log into the MFP.

Note: The procedure is shown below; the rest of the document shows the steps and examples in more detail.

The following procedure can be used to successfully integrate MFP User Control with Windows Active Directory by using LDAP Server Access Control on the supported models:

Procedure

1. Determine Active Directory User Attributes to be used as field values in a custom LDAP server setup for authenticating network users.
2. Create Page Limit, Authority and Favorite Operation Groups on the MFP to meet the customer's requirements.
3. Create a new Global Address Book with a Custom LDAP Server setup on the MFP using the desired active directory user attributes for the group field names from Step 1 under the Linkage with User Control Function.
4. Enable User Control with login name and password on the MFP using the custom LDAP server as the Default Network Authentication Server and enable LDAP Server Access Control.
5. Update user attributes in Active Directory for each user to reflect the Page Limit, Authority and Favorite Operation Groups created on the MFP.
6. Use Device Cloning to save the appropriate settings to the other MFPs if multiple MFPs of the same type will be used in the same network.

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Integrating Sharp MFP User Control with Active Directory User Attributes

A feature has been added to the newest Sharp products that allow the MFP User Control Function to integrate with Windows Active Directory User Attributes. This feature is called LDAP Server Access Control and it permits controlling network users in the same manner as users created locally on the MFP. The Page Limit Group, Authority Group and Favorite Operation Group can each be applied to network users when they log into the MFP.

Page Limit Group - Limits the number of prints, scans and copies the user can make.

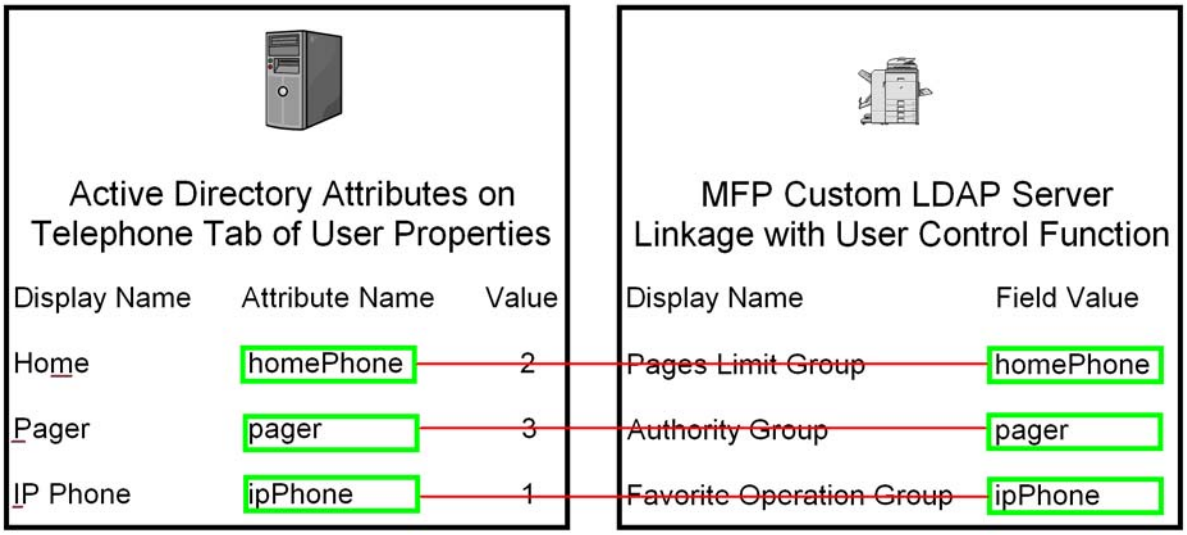
Authority Group – Controls what functions the user can access on the MFP.

Favorite Operation Group – Customizes the MFP display presented to the user on login.

Currently, the Sharp MX-4100/4101/5001, MX-M283/363/453/503, MX-M623/753, MX-3110/3610 and MX-4110/5111 series support the LDAP Server Access Control feature.

The following diagram shows the relationship between active directory user attributes and the MFP custom LDAP server Linkage with User Control Function field values. The default values of these fields on the MFP are: Page Limit Group = pagelimit; Authority Group = authority and Favorite Operation Group = favorite.

If these default values were used, new attributes with corresponding names would have to be created in Active Directory by the domain administrator by extending the schema. This is a complex procedure rarely undertaken even by domain administrators. However, by utilizing unused user attributes with a custom LDAP server setup on the MFP, no additional effort is required by the administrator to incorporate this feature. Changes would only need to be made on the MFP where the default values of the fields are replaced by the desired unused attributes of the user in active directory as shown below.



In the above case, attributes from the Telephones tab of the user properties are used as links to the MFP user control function fields. The Page Limit Group field is set to homePhone, Authority Group is set to pager and Favorite Operation Group is set to ipPhone on the MFP.

(Note: The attribute names are case sensitive and are not the same as the displayed names.)

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To apply these groups for user control at the MFP only requires the administrator to assign numeric values to the user attributes. These values correspond to the index number of the groups when they are created on the MFP. In the above example, the value of 2 for the homePhone corresponds to the second Page Limit Group created; the value of 3 for pager corresponds to the third Authority Group created; and a value of 1 for ipPhone corresponds to the first Favorite Operation Group created.

Each network users experience after logging into the MFP can be varied by changing the values of the user's attributes in active directory. Windows Script Host programming can be used to perform batch updates to user attributes based on the customer's criteria. The following screens show some of the possible logins based on LDAP Server Access Control.

1. Network user attempting to copy in color but restricted to black and white copies only.

Figure 1

2. Network user who has requested that the display language and keyboard be in Russian.

Figure 2

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3. Network user who has requested that MFP display language be in Spanish.

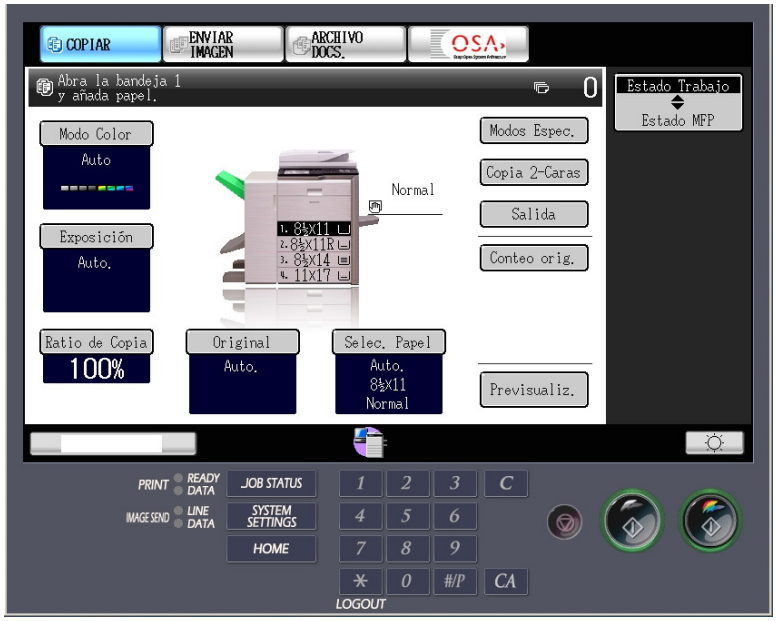

Figure 3

4. Network user who is not allowed to use any function on the MFP.

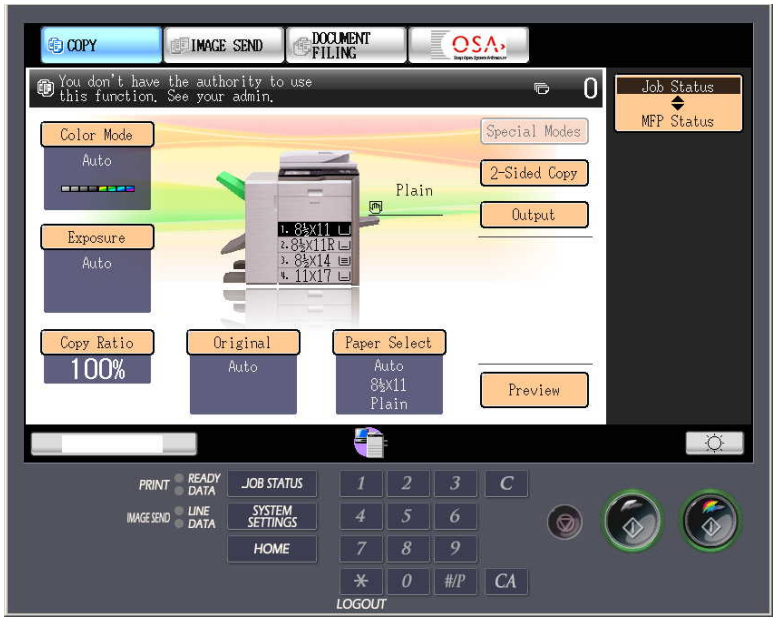

Figure 4

The above login screens are based on the following tutorial using a simplistic scenario and a small number of users for the sake of clarity. All selections made for the various users and groups were arbitrary and used for illustration purposes only.

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The following tutorial details these procedures using two different examples and demonstrates how to fully leverage the built in features of Sharp MFPs without the need of additional software or hardware.

Example Setups of MFP User Control Integrated with Active Directory

Example 1 – Using Attributes from the Telephone Tab of the AD User

In this scenario, a fictitious company (Testers Inc.) is hosted by a single domain controller (Exch2010) with a domain name of TESTDOMAIN.COM. All users except the administrator are members of the TESTUSERS organizational unit within the domain. A new Sharp MX-5001N has been placed and the company has certain requirements for its employees to use it.

The company wants to have all users log into MFP with their network credentials to restrict usage of the MFP. Each user in the organization has a department and job title assigned within active directory. Currently, there are 3 departments (Advertising, Production and Temporary Workers) and 3 job titles (Manger, Staff and Temporary). Department Managers are to have full and unrestricted access to all features of the MFP. Staff members in the Advertising department will have full access to the features of the MFP but color output for printing and copying will be limited. Staff members in the Production department will be restricted to black and white printing and copying but can scan in color. For security purposes, temporary workers are not allowed to use any functions of the MFP even though they have network accounts. Users not assigned a job title or department are also denied access to the MFP.

In addition, some employees speak Russian and others speak Spanish as their first languages. The company wants these employees to be able to see the MFP display instructions in their native languages if they request it.

In this example, unique user rather than organizational attributes are used as these are private values rarely assigned by domain administrators to users. Follow the instructions in the example below to obtain the company's goal.

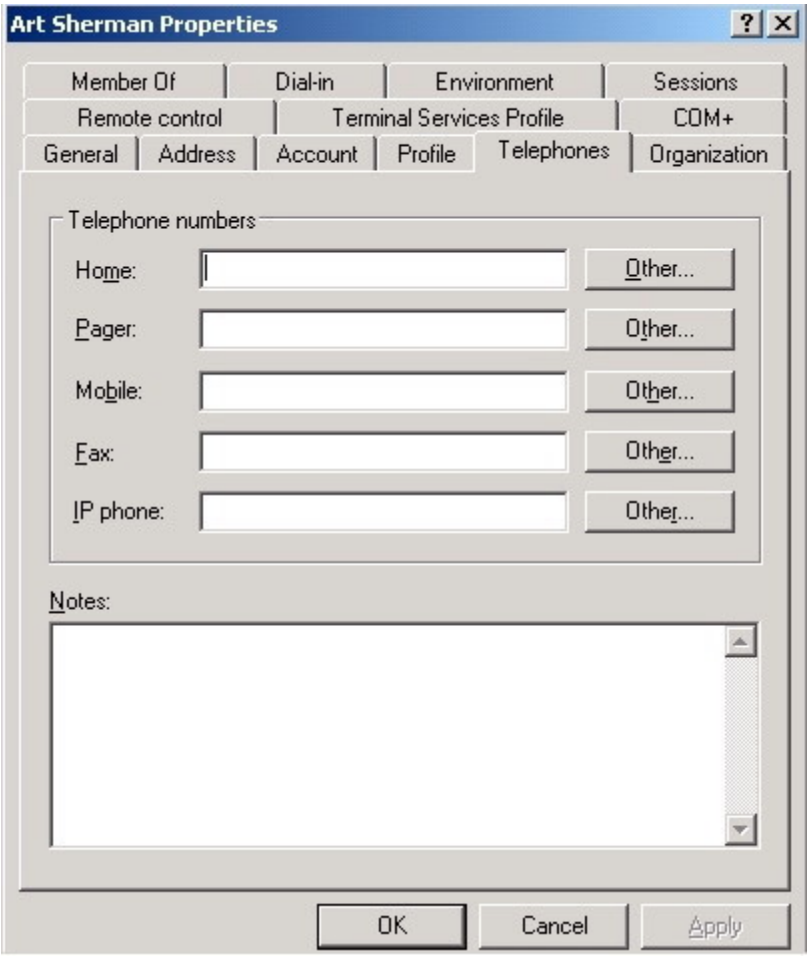
1. Determine Active Directory User Attributes to use as field values.

   NOTE: This step should be completed by the network administrator

   Each user object in Windows Active Directory has a number of attributes contained in it such as login name and password. Many (but not all) of these attributes can be viewed using the Windows Active Directory Computer and User administrative tool on a domain server. All attributes can be viewed and edited by the ADSIEdit.mcs (Active Directory Services Interface Editor) Snapin tool available for download from Microsoft®.

   In this example, commonly unused attributes that can be viewed and edited with the Windows Active Directory Computer and User administrative tool are shown below for the Telephones tab.

   NOTE: Not all attributes need to be on the same tab but it is more convenient for editing.



The actual names of the attributes are different than the names that are shown on the Telephones tab.

Display Name	Attribute Name	Normally Unused
Home	homePhone	Yes
Pager	pager	Yes
Mobile	mobile	No
FAX	facsimileTelephoneNumber	No
IP Phone	ipPhone	Yes

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The following attributes are accessed using the Other button for the individual attributes shown above on the Telephones tab. These particular attributes can contain more than one value. If they are used for field values for the MFP's Custom LDAP Server setup, they can contain only a single value.

otherHomePhone

otherPager

otherMobile

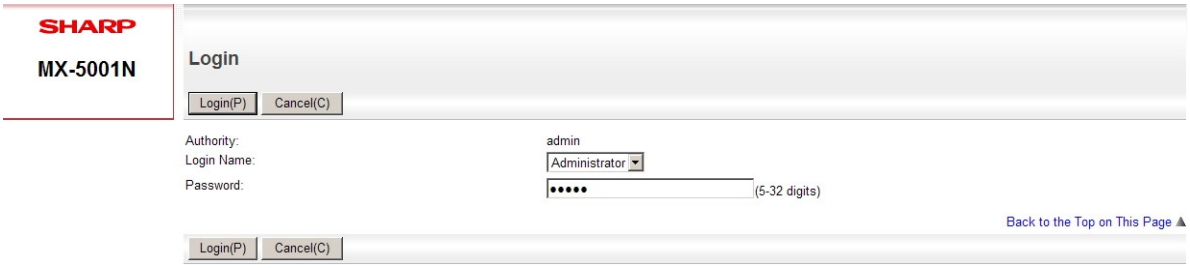
otherFacsimileTelephoneNumber

otherIpPhone

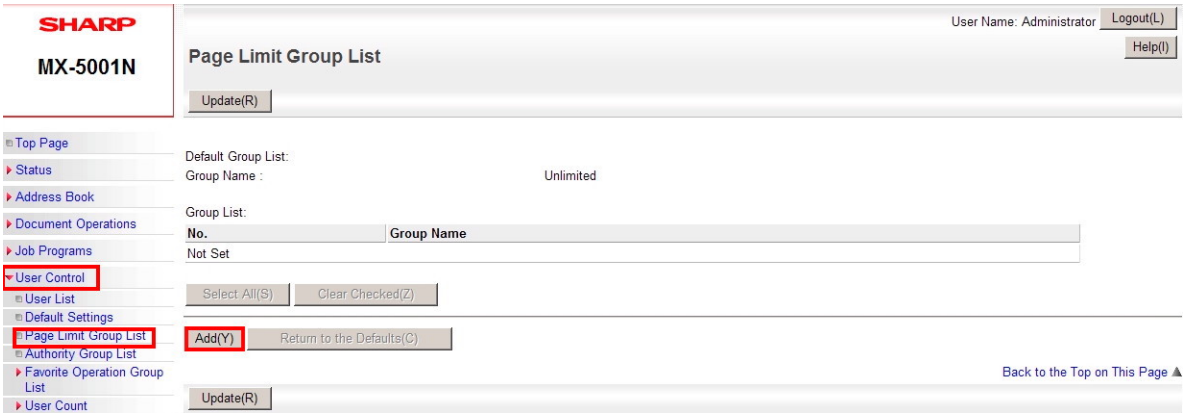
For ease of viewing and editing by the network administrator, the homePhone, pager and ipPhone attributes on the Telephones tab will be used in the MFP Custom LDAP Server setup in a later step.

2. Create Page Limit, Authority and Favorite Operation Groups on the MFP.

   a. Browse to the main web page of the MFP and log in as the Administrator (default password admin).



   b. Click on the User Control, click on Page Limit Group List and then click on the Add button when the page below appears.



   c. Type in a descriptive name for the group in the Group Name field. In this case, type in Unlimited_Group as this group has no restrictions on page limits. As this is the first group being created, the Registration Model drop down box will be at the default value of Unlimited. Leave all page values at Unlimited and click on the Submit button.

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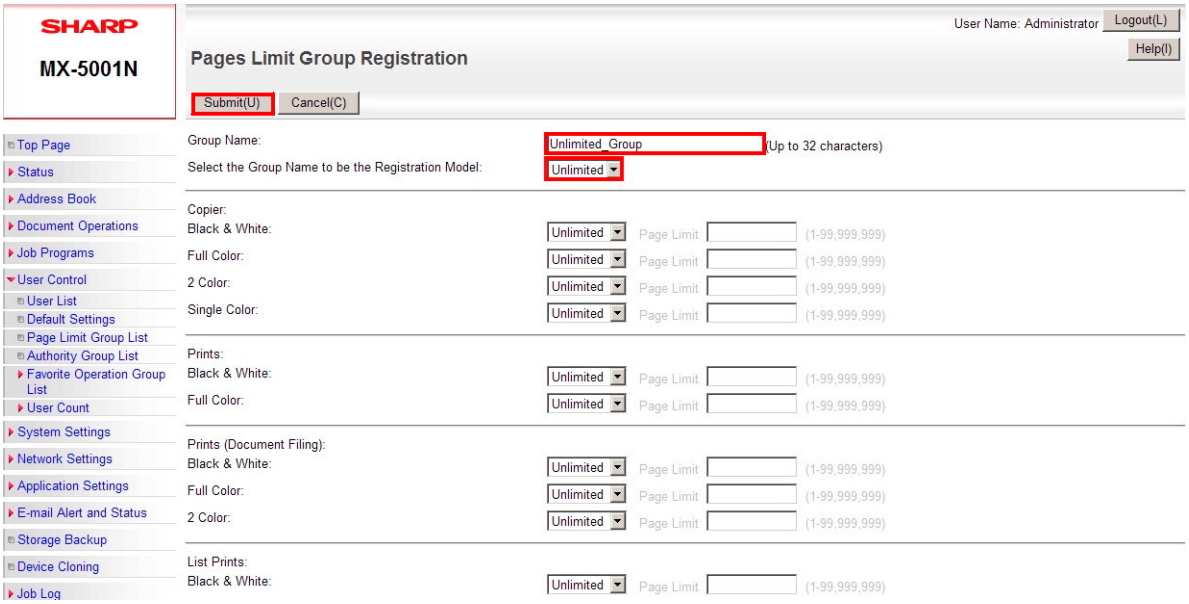
NOTE: Creating an Unlimited_Group is not really required. However, it is done here to make the exercise easier to follow.



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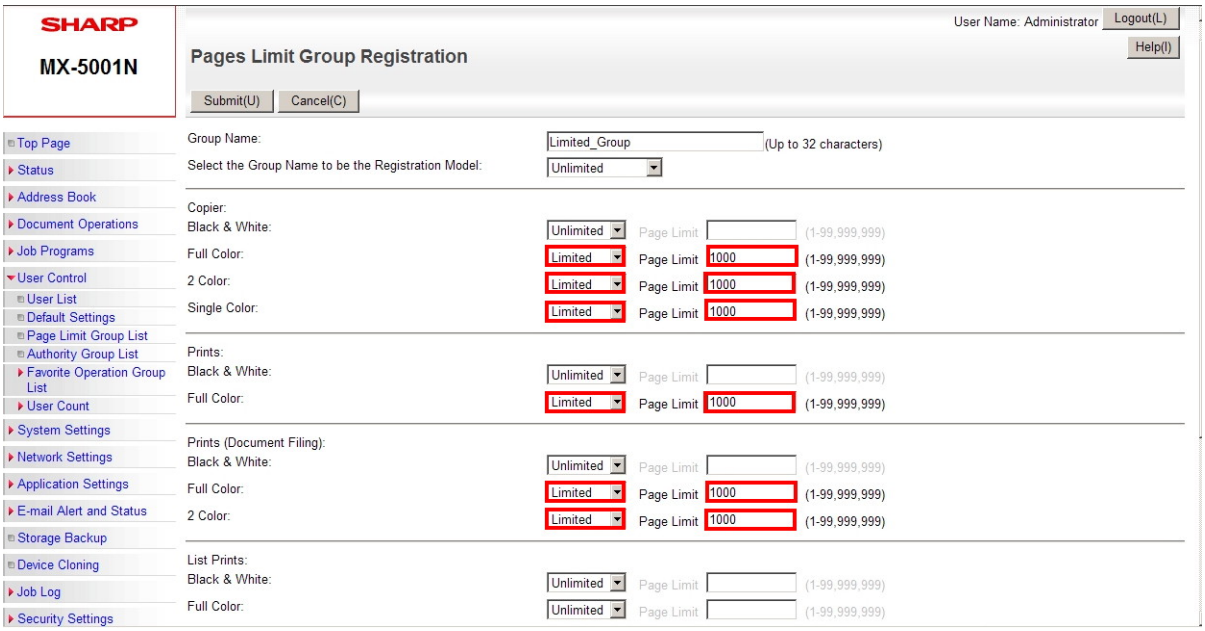
d. At the Page Limit Group List page, click on the Add button to create another group. Next, type Limited_Group for the name of this group. Leave all Black and White Copier, Prints and Prints (Document Filing) as Unlimited. Select Limited for all color modes for printing and copying and set the limit to 1000. Leave List Prints and Scanning at Unlimited. Click on the Submit button when done.



Note that each group is assigned a group number. These numbers will be used for active directory user attributes to assign page limit restrictions to network users.

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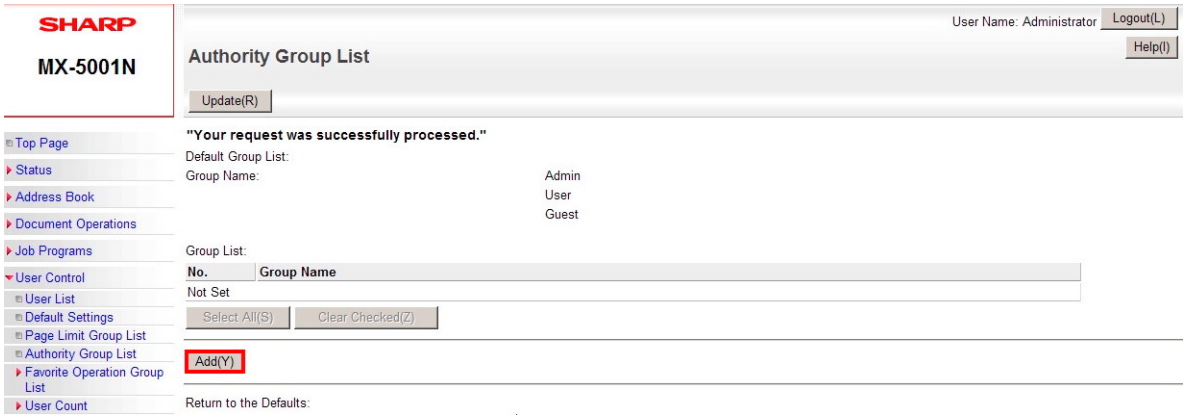
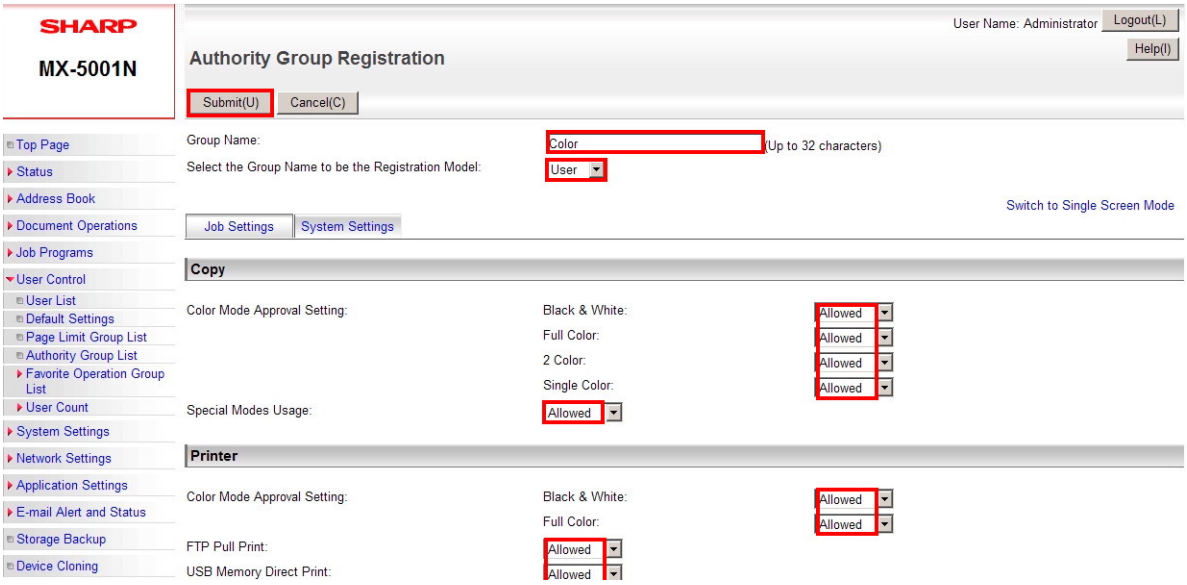
e. Next, click on the Authority Group List and click on the Add button to create the first authority group.



f. Type in Color for the Group Name and select User as the Registration Model. Leave all selections for all modes to Approved and click on the Submit button when done.



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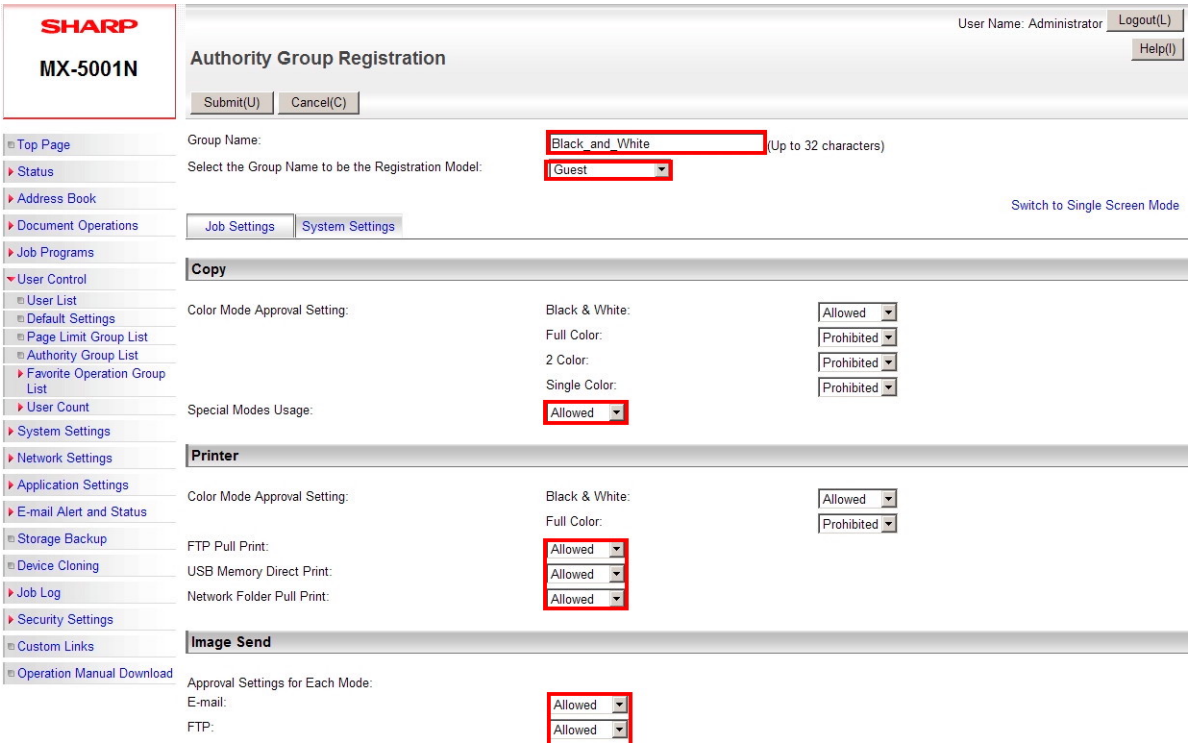
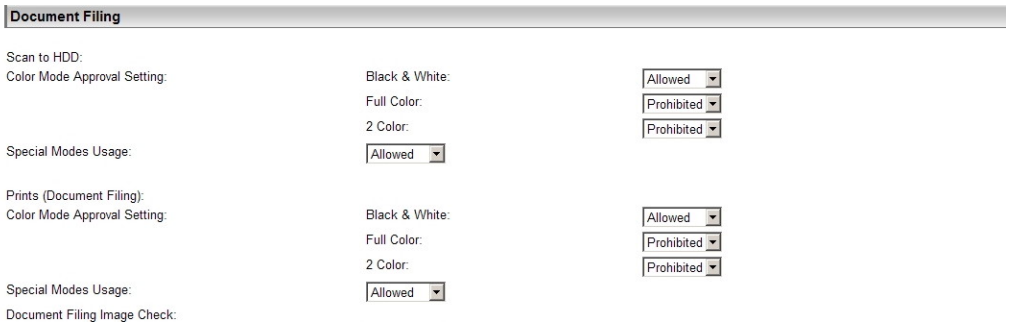
g. Click on the Add button at the Authority Group List page to add the next authority group. Type in Black_and_White as the group name and select Guest as the Registration Model. Ensure that all color modes for copying and printing are set to Prohibited.



h. Under the Document Filing section, select Prohibited for Scan to HDD Color Mode Approval Setting and Prints (Document Filing) Color Mode Approval Setting. Set all other selections on this page to Allowed as this group has access to all MFP functions except printing and copying in color. Click on the Submit button when done.



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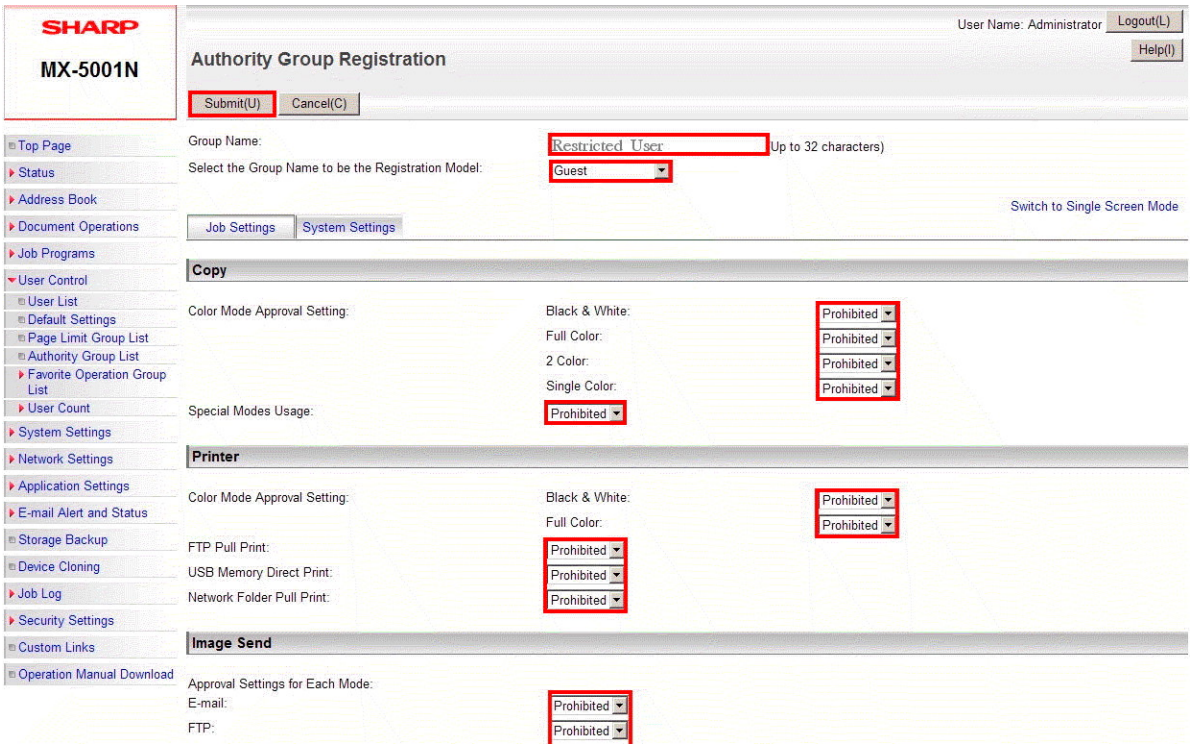
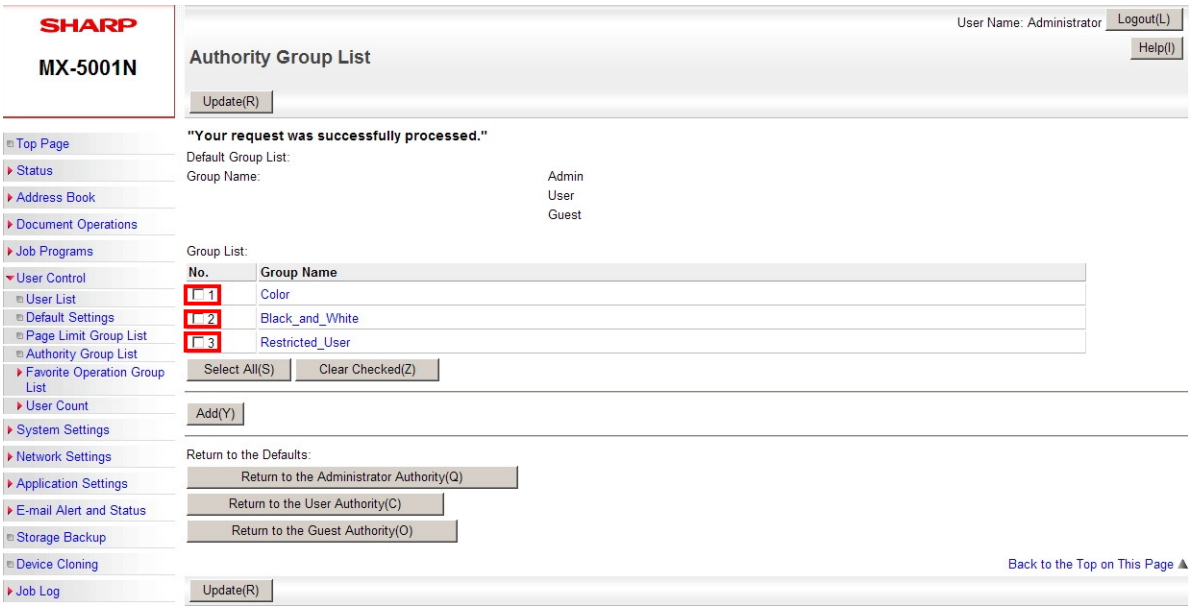
i. Click on the Add button at the Authority Group List page to add the last authority group. Type in Restricted_User as the group name and select Guest as the Registration Model. As this group will be used to prevent unauthorized access to the MFP, set all modes to Prohibited. Click on the Submit button when done.



j. Each authority group name is assigned a group number when created. These numbers will be used with active directory user attributes to control MFP features available to network users.



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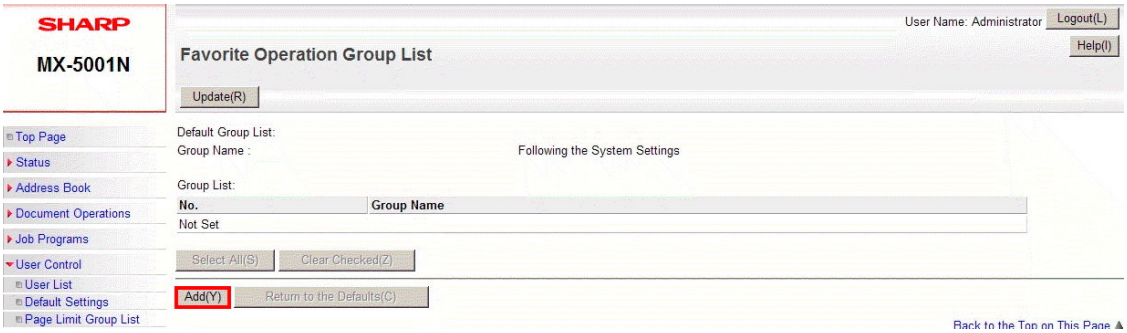
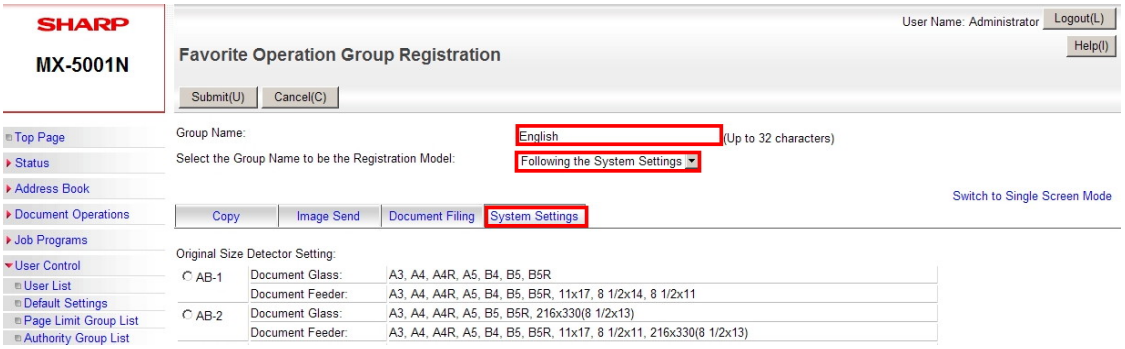
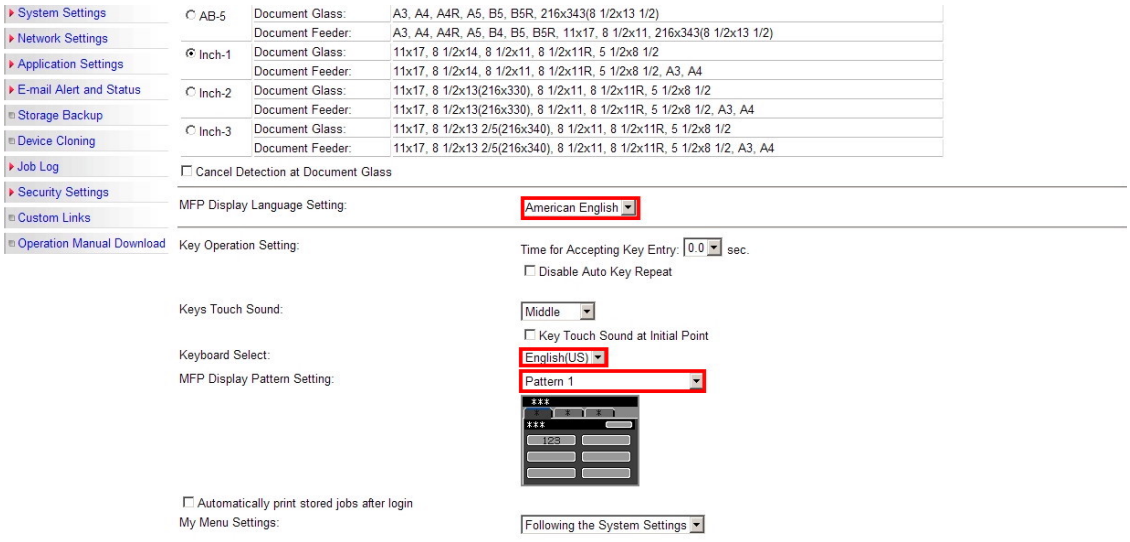
k. Click on the Favorite Operation Group List menu and then click on the Add button to create the first operation group.



l. Type in English for the group name, select Follow the System Settings for the Registration Model and click on the System Settings tab. (As English is the default language used by the MFP, this group does not have to be created but it is included to make the exercise easier to follow.)



m. Scroll down the page until the MFP Display Language Setting selection is seen and ensure American English is selected. For Keyboard Select, select English(US) and set the MFP Display Pattern Setting to Pattern 1. (NOTE: For purposes of this exercise, these are the only changes that will be made although numerous items can be configured for a favorite operation group.) Click on the Submit button when done.



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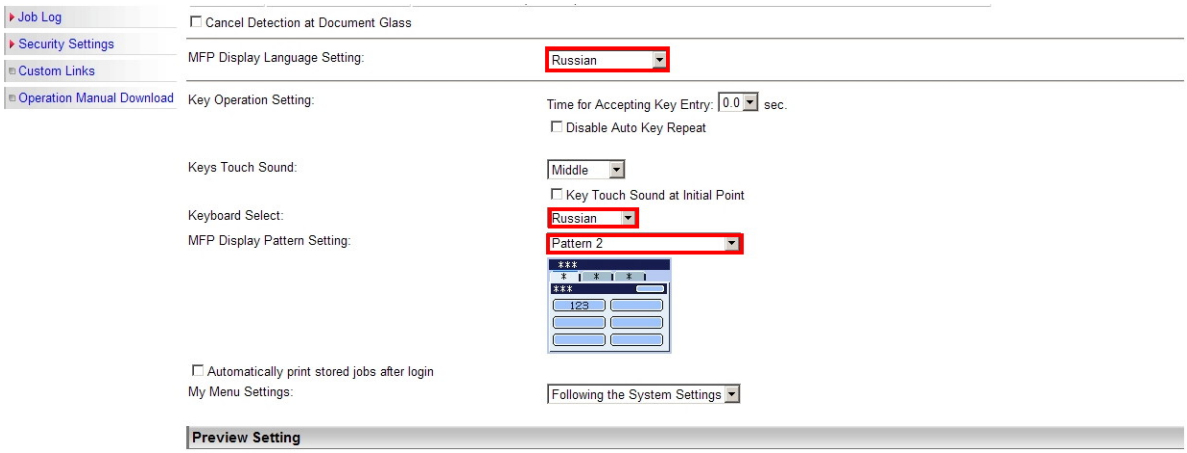
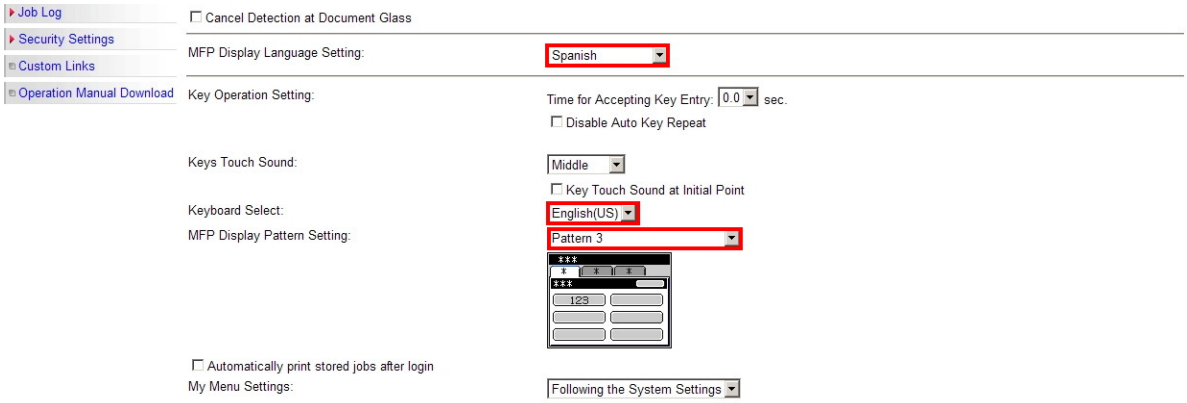
n. Click on the Add button at the Favorite Operation Group List page to create the next operation group. Type in Russian for the group name, select Follow the System Settings for the Registration Model and click on the System Settings tab. Scroll down the page until the MFP Display Language Setting selection is seen and select Russian. For Keyboard Select, select Russian and set the MFP Display Pattern Setting to Pattern 2.Click on the Submit button when done.



o. Click on the Add button at the Favorite Operation Group List page to create the next operation group. Type in Spanish for the group name, select Follow the System Settings for the Registration Model and click on the System Settings tab. Scroll down the page until the MFP Display Language Setting selection is seen and select Spanish. For Keyboard Select, select English(US) and set the MFP Display Pattern Setting to Pattern 3.Click on the Submit button when done.



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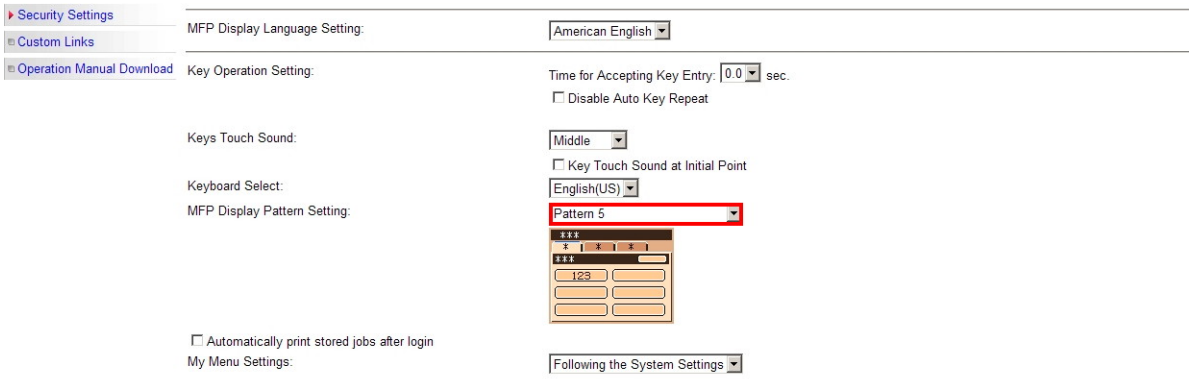
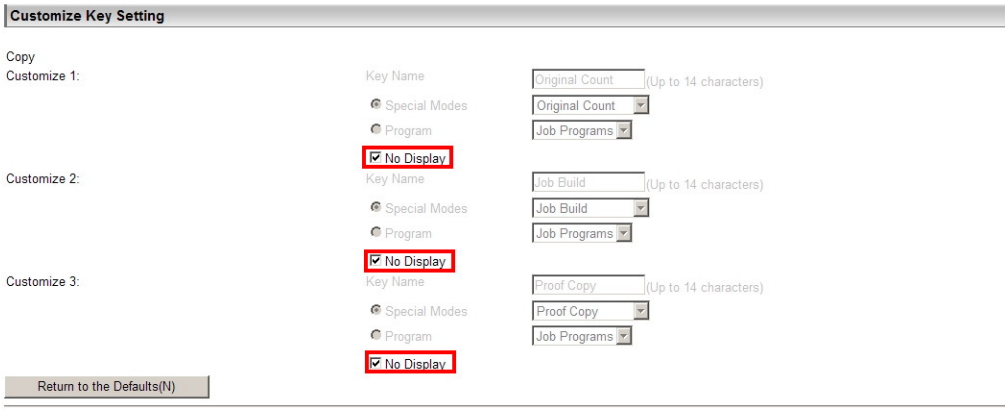
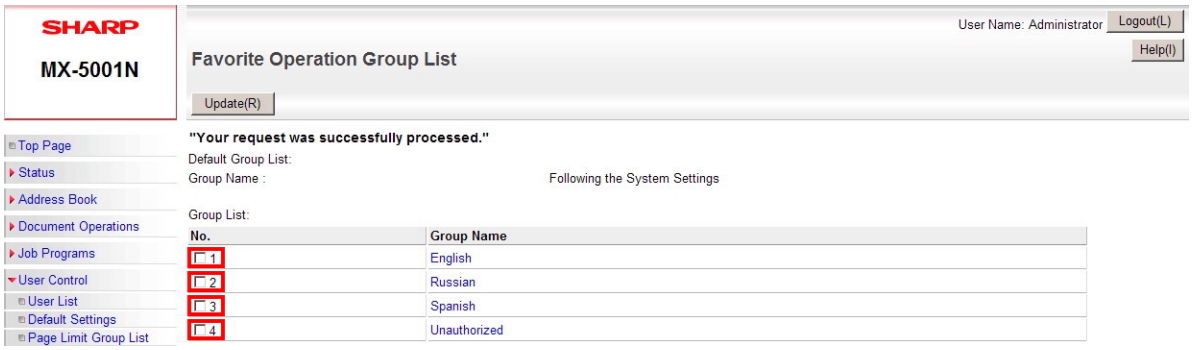
p. Finally, click on the Add button at the Favorite Operation Group List page to create the last operation group. Type in Unauthorized for the group name, select English for the Registration Model and click on the System Settings tab. Scroll down the page and set the MFP Display Pattern Setting to Pattern 5. (This is to provide a visual cue when an unauthorized user logs into the MFP.)



q. Enable the check boxes next to No Display for all custom keys on this page. Click on the Submit button when done.



r. As with all other groups, numbers are assigned to the favorite operations groups. These numbers will be used for active directory user attributes to assign custom display panels to network users.



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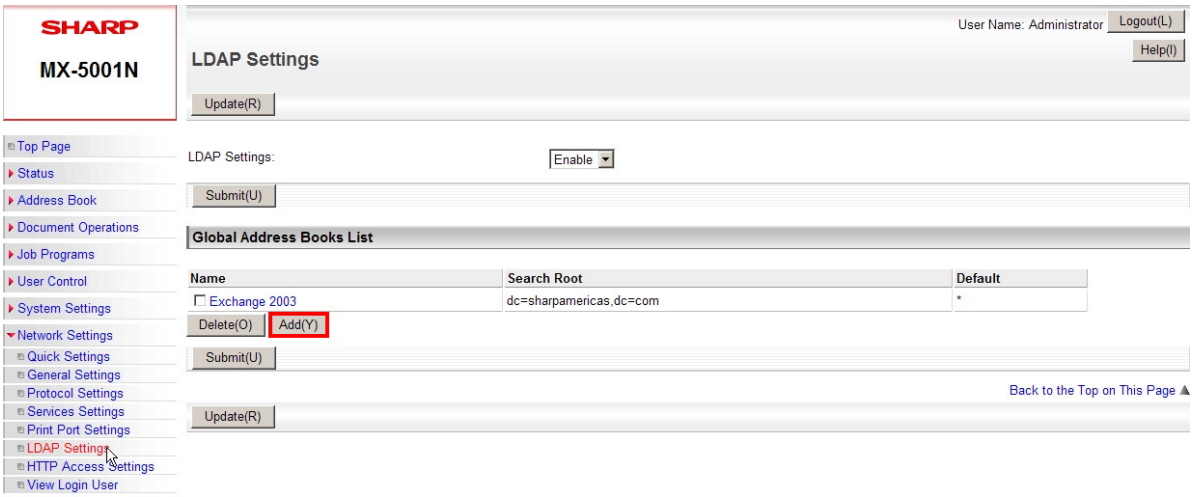
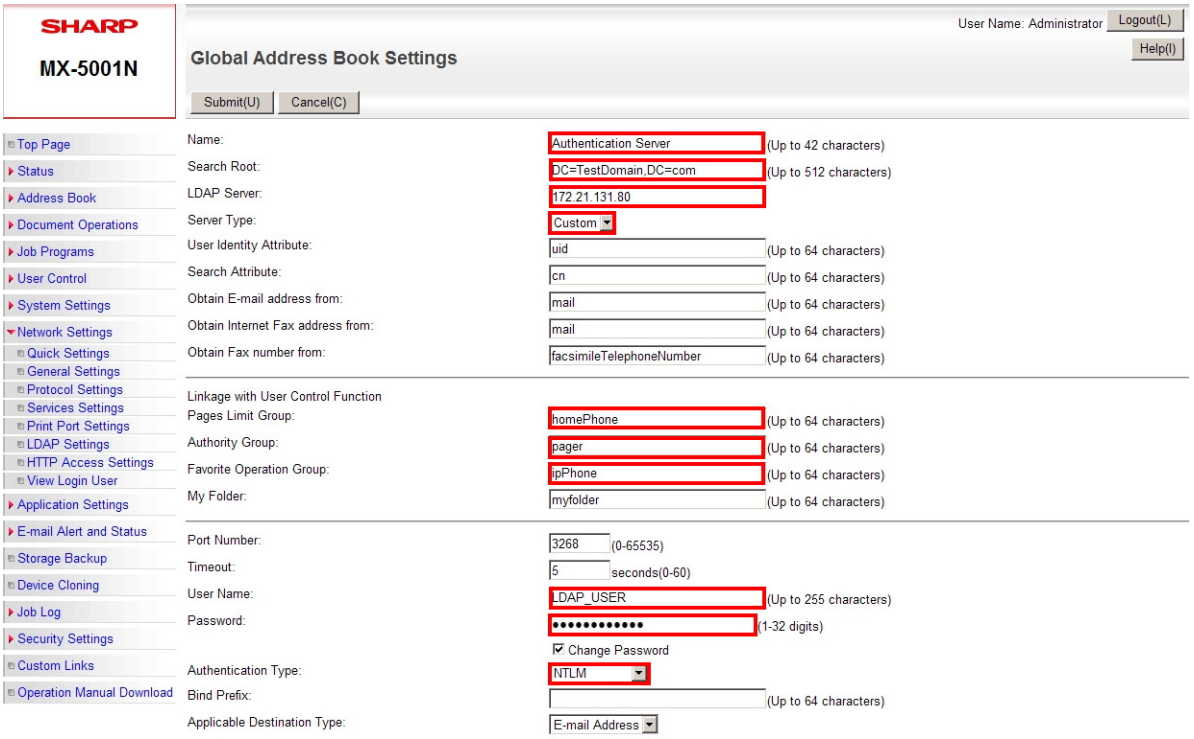
3. Create a new Global Address Book with a Custom LDAP Server on the MFP and link it with the User Control Function.

   a. On the main Web page of the MFP, click on Network Settings, click on LDAP Settings and then click the Add button to create a new Global Address Book.



   b. Fill in the appropriate values for the LDAP server being connected to, select Custom for the Server Type drop down box and enter the attribute names that will be used for Linkage with User Control Function. In this example, the Page Limit Group field is set to homePhone, the Authority Group field is set to pager and the Favorite Operations Group field is set to ipPhone. Complete the rest of the required LDAP settings and click on the Submit button when done.



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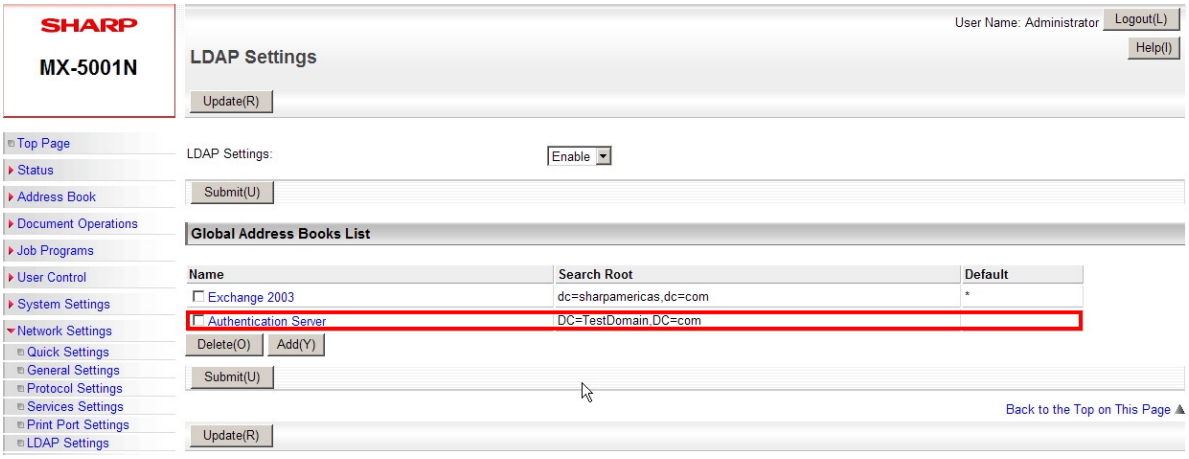
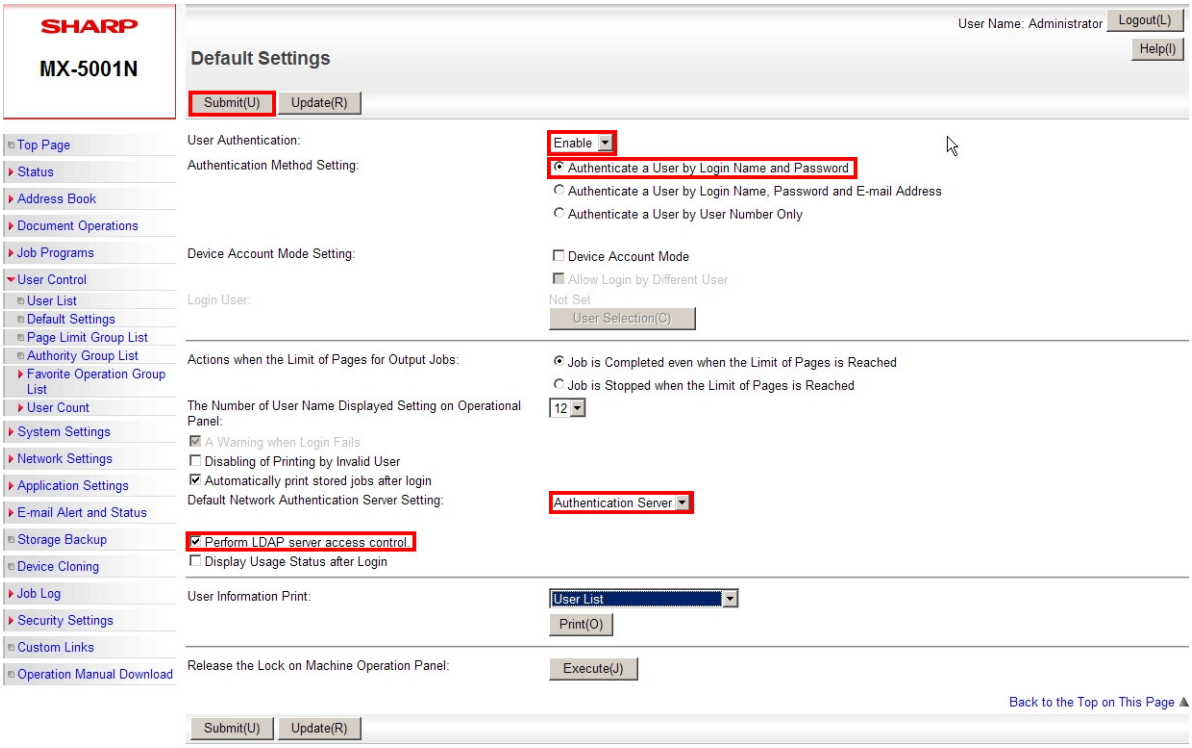
c. The newly created Custom LDAP Server (in this case named Authority Server) is added to the Global Address Book List.



4. Enable User Control on the MFP.

a. On the main Web page of the MFP, click on User Control and then click on Default Settings. Select Enable from the drop down list and click the radio button next to Authenticate a User by Login Name and Password. For the Default Network Authentication Server, select the newly created Global Address Book (in this example Authority Server. Click on the checkbox next to Perform LDAP server access control. Click on the Submit button when done.



b. While the MFP is now setup for network user authentication, the Page Limit, Authority and Favorite Operation Groups settings will not be applied to the user until the user attributes are updated in Active Directory in the next step.

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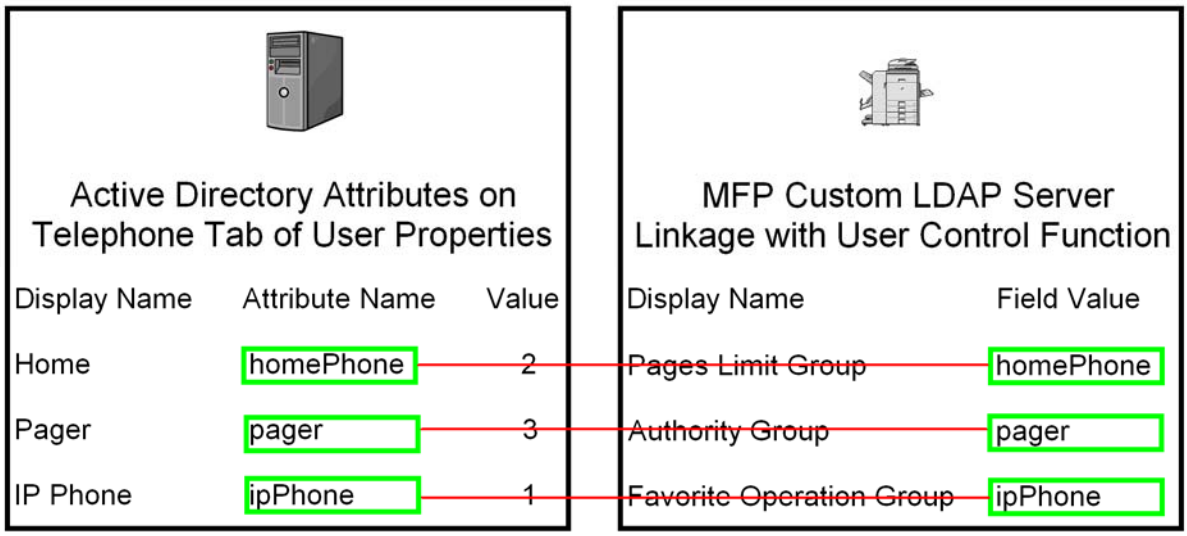
5. Update user attributes in Active Directory

NOTE: This step should be completed by the network administrator.

In this example, the Page Limit and Authority Groups are applied to users based on their job title and department stored on their Organization tab in Active Directory. By default, all users are assigned a Favorite Operation Group with the MFP display in English. If the user wants the MFP display to be in Spanish or Russian, they must make a request to the network administrator. The relationships of the Active Directory attributes to the various groups created on the MFP in this example are shown below.



The various group names and index values for the corresponding attributes are shown in the following tables.

Page Limit Groups	
Group Name	Index values to enter into the Home field
Unlimited_Group	1
Limited_Group	2

Authority Groups	
Group Name	Index values to enter into the Pager field
Color	1
Black_and_White	2
Restricted_User	3

Favorite Operation Groups	
Group Name	Index values to enter into the IP Phone field
English	1
Russian	2
Spanish	3
Unauthorized	4

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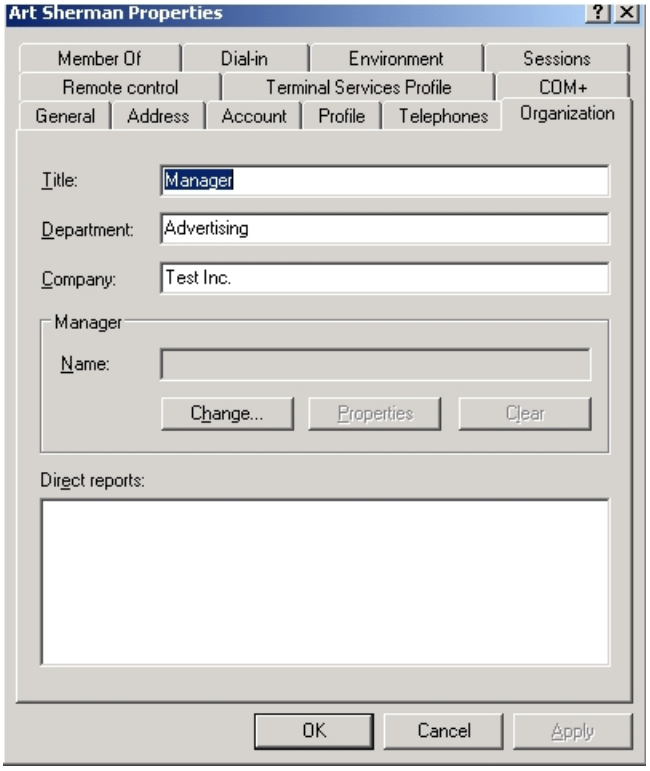
The user attributes in this example can be edited manually by using the Active Directory Computer and User administrative tool on the LDAP server.

a. On the LDAP server, start the Active Directory Computer and User administrative tool and open the container or organizational unit where the users are located (in this example, it is the TestUsers organizational unit). Highlight the first user, right click, select Properties and click on the Organization tab.



b. This individual has a job title of Manager and heads up the Advertising department. As a manager, he is to have access to all features of the MFP. Based on this, he is to be assigned to the Unlimited_Group Page Limit Group and the Color Authority Group. Unless otherwise requested by the user, he will be assigned to the English Favorite Operations Group.

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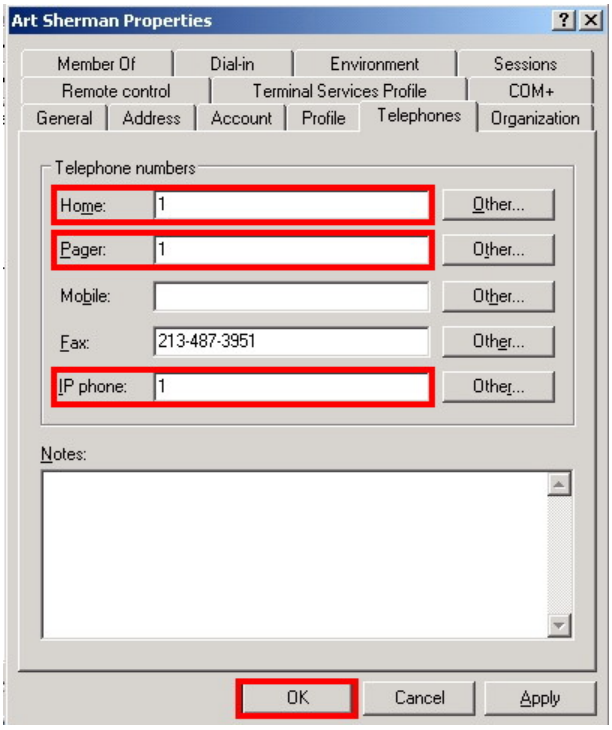
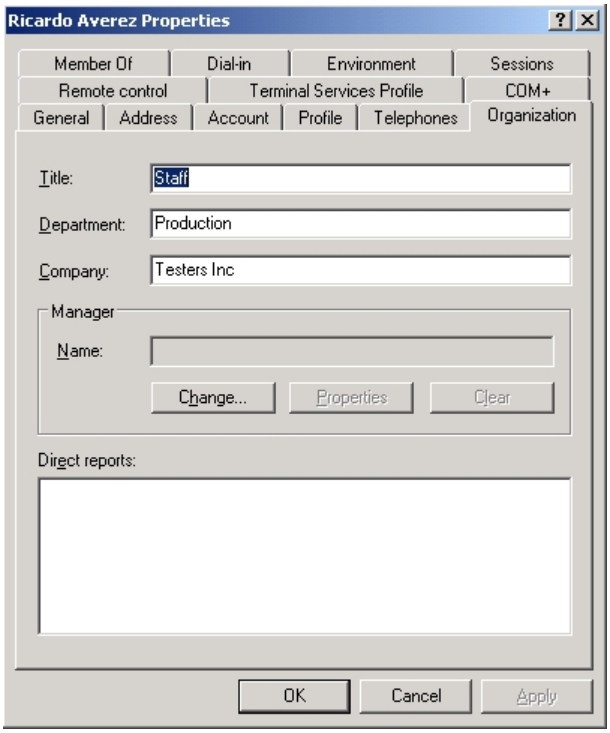
c. Click on the Telephones tab and enter the following values for this user: In the Home field, enter a value of 1 (Unlimited_Group); In the Pager field, enter a value of 1 (Color); In the IP Phone field, enter a value of 1 (English.). Click on the OK button when done.



d. Highlight the next user, right click, select Properties and click on the Organization tab to determine what groups should be assigned to him.



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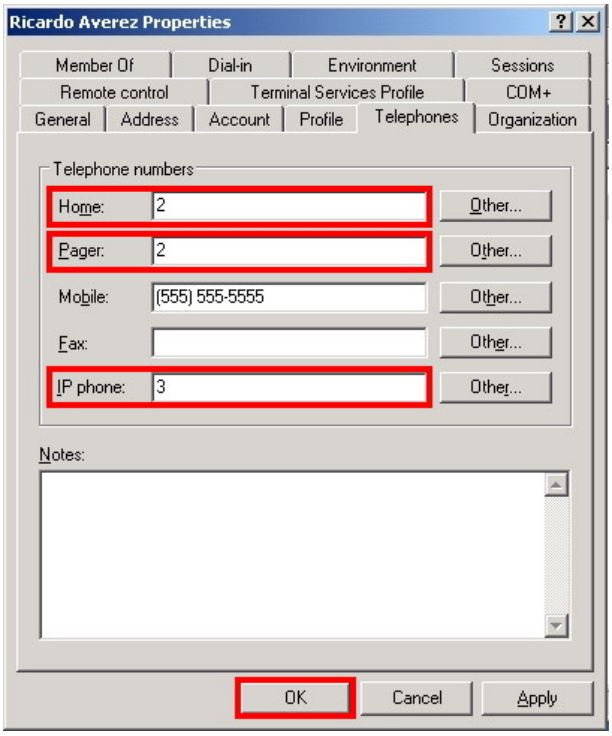
e. This individual has a job title of Staff and is part of the Production department. As a staff member in this department, he is not allowed any color functions and his output of copies and prints are limited. As a result, he is to be assigned to the Limited_Group Page Limit Group and the Black_and_White Authority Group. He has requested that the MFP display language be in his native language of Spanish so he will be assigned to the Spanish Favorite Operations Group.

f. Click on the Telephones tab and enter the following values for this user: In the Home field, enter a value of 2 (Limited_Group); in the Pager field, enter a value of 2 (Black_and_White); in the IP Phone field, enter a value of 3 (Spanish). Click on the OK button when done.



g. Continue the above steps until all users have been assigned the correct values based on the customer's requirements.

NOTE: Users without a job title or not assigned to a department should have their appropriate attributes set to the Limited_Group and Restricted_Group for security purposes. These individuals would have to request access from their department head to the domain administrator.

NOTE: This process could be automated by using a Windows Script Host file to batch update the LDAP attributes but that is outside of the scope of this document.

Now when network users log into the MFP, they will have their access to the MFP functions restricted by their job title and department. The MFP display will also be in the language requested by that user as shown in Figures 2 – 4 on Pages 2 and 3.

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6. Clone User Control, LDAP and Network Settings with Device Cloning.

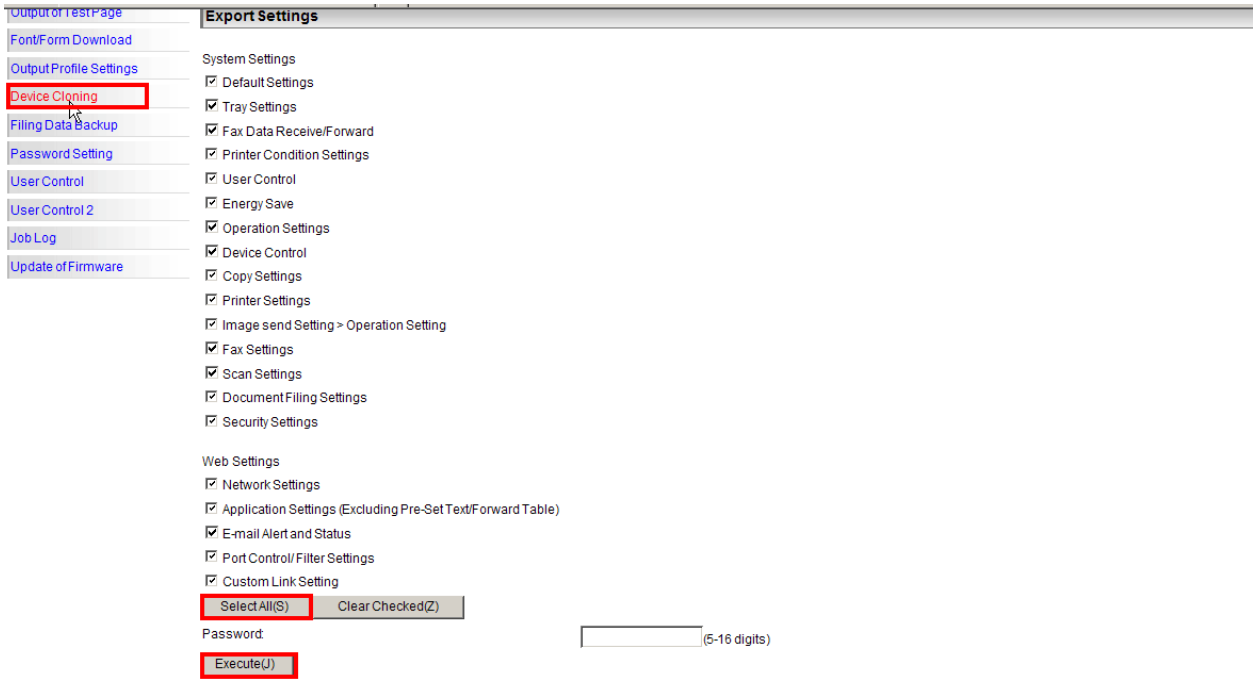
   If additional MFPs in the same network will be using LDAP Server Access Control, use the following procedure to clone the settings required after testing the original unit.

   a. Open the Service Web page of the MFP just configured using the following URL in Windows Internet Explorer:

   http://{IP_Address_of MFP}/service_testpage.html

   b. Enter the default password service in the password field and click on the Submit button.

   c. Click on the Device Cloning menu item, click on the Select All button and then the Execute button.



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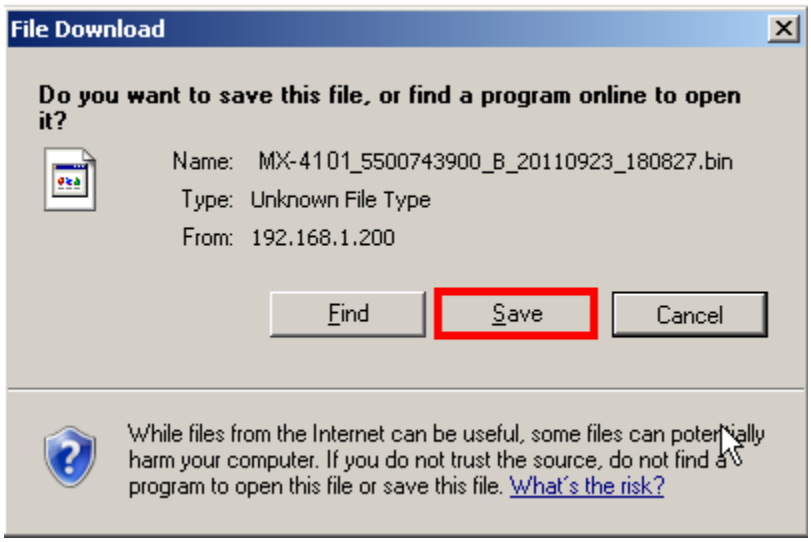
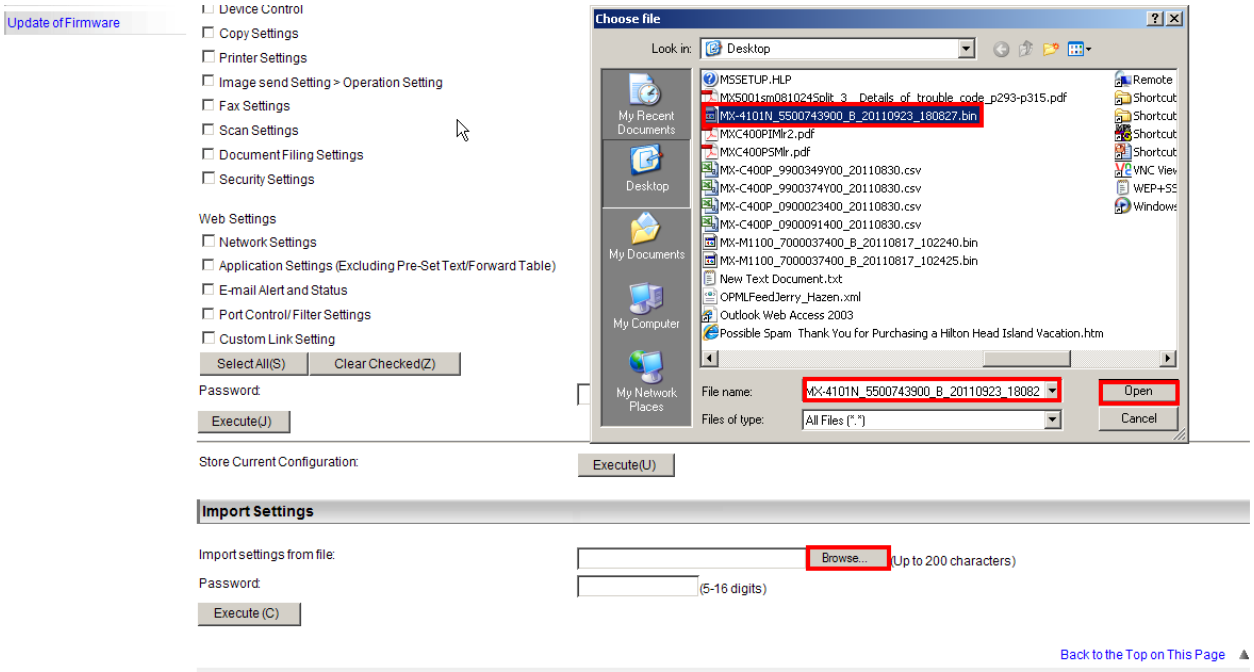
d. Click on the Save button to save the exported *.bin file in a known location on your computer.


File Download
Do you want to save this file, or find a program online to open it?
Name: MX-4101_5500743900_B_20110923_180827.bin
Type: Unknown File Type
From: 192.168.1.200
Find
Save
Cancel
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not find a program to open this file or save this file. What's the risk?

e. Next, log into the Service Web page of the target MFP from the same computer where you saved the *.bin file. Click on the Device Cloning menu item and the click on the Browse button in the Import Settings area. Navigate to the saved *.bin file and click on the Open button.



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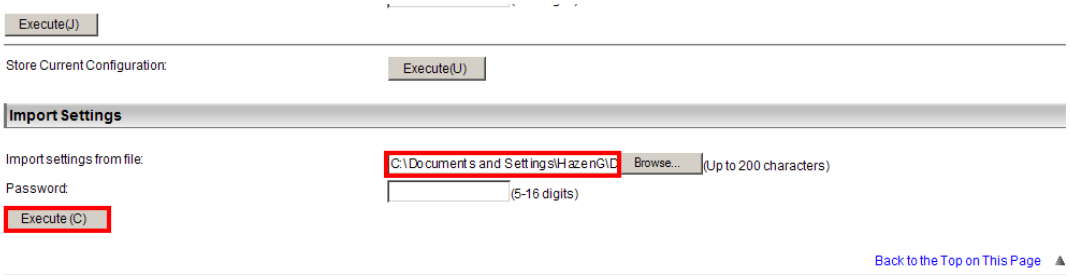
f. Click on the Execute button in the Import Settings section to import the clone file into the target MFP.



g. Repeat the above steps until all MFPs have the same clone file imported. Now network users will be have the same user experience regardless of which MFP they use in their network.

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Example 2 – Using Attributes Common to all Users

The domain in this scenario (Sharpshow.com) uses a different Active Directory organizational structure but it has the same requirements as the previous example. The domain administrator has created users in organizational units based on user roles as well as departments.

The company wants to have all users log into MFP with their network credentials to restrict usage of the MFP. Each user in the company has a department and job title assigned within active directory. Currently, there are 3 departments (Advertising, Production and Temporary Workers) and 3 job titles (Manger, Staff and Temporary). Department Managers are to have full and unrestricted access to all features of the MFP. Staff members in the Advertising department will have full access to the features of the MFP but color output for printing and copying will be limited. Staff members in the Production department will be restricted to black and white printing and copying but can scan in color. For security purposes, temporary workers are not allowed to use any functions of the MFP even though they have network accounts.

In addition, some employees speak Russian and others speak Spanish as their first languages. The company wants these employees to be able to see the MFP display instructions in their native languages if they request it.

In this example, attributes common to all users are used as opposed to private attributes – that is, attributes that describe things related to more than one user such as company name and location. These attributes have an advantage in that multiple users can be selected in the Active Directory Computer and User administrative tool and the same attribute values can be applied to all users in one step. The disadvantage is often these attributes are filled in when user accounts are created. Careful review of all user accounts will be required to ensure that empty attribute fields are available for all users.

Follow the instructions in the example below to obtain the company's goal.

1. Determine Active Directory User Attributes to use as field values.

   NOTE: This step should be completed by the network administrator

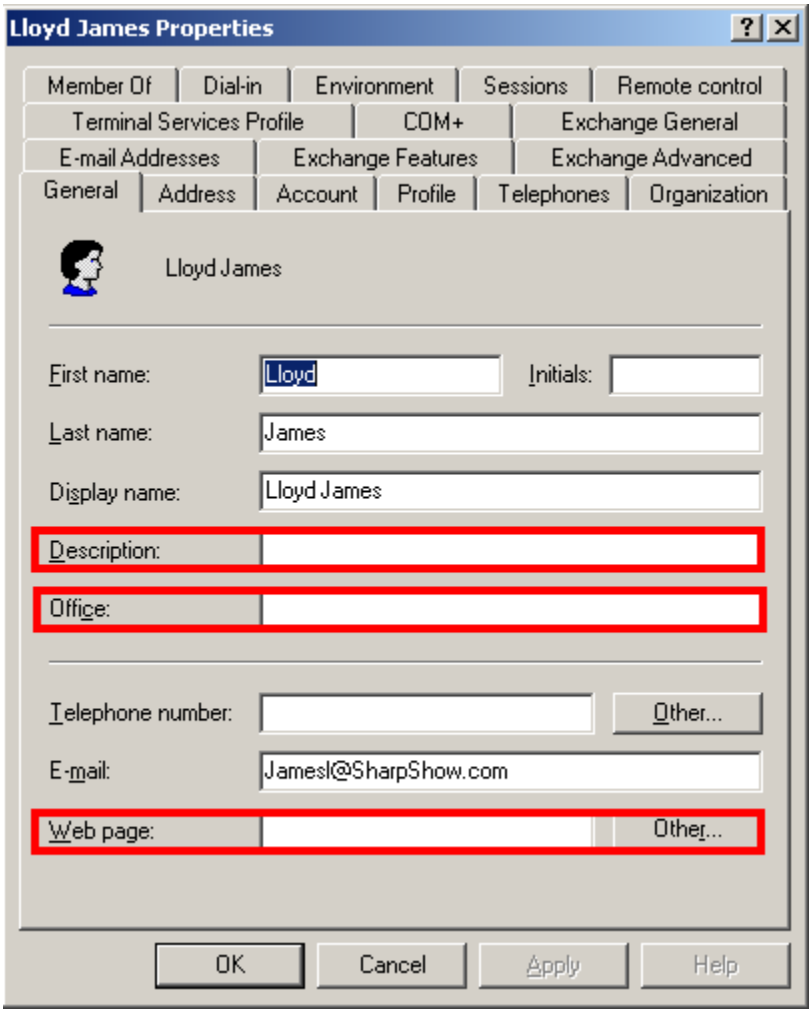
   In this example, the following common attributes were found to be unused on the General tab for all users in the Active Directory structure of the company

   Description:

   Office:

   Web page:

   When a single user's properties are displayed in the Windows Active Directory Computer and User administrative tool, the General tab is displayed as shown below:



However, when multiple users are selected, only the tabs and attributes common to all selected users are displayed as shown below. Clicking on the check box next to the attribute name allows values to be filled in that will be stored for all selected users.

NOTE: Even though it would be possible to apply the same Telephone number, Fax and E-mail address to all of the selected users, it would be a poor practice to do so.

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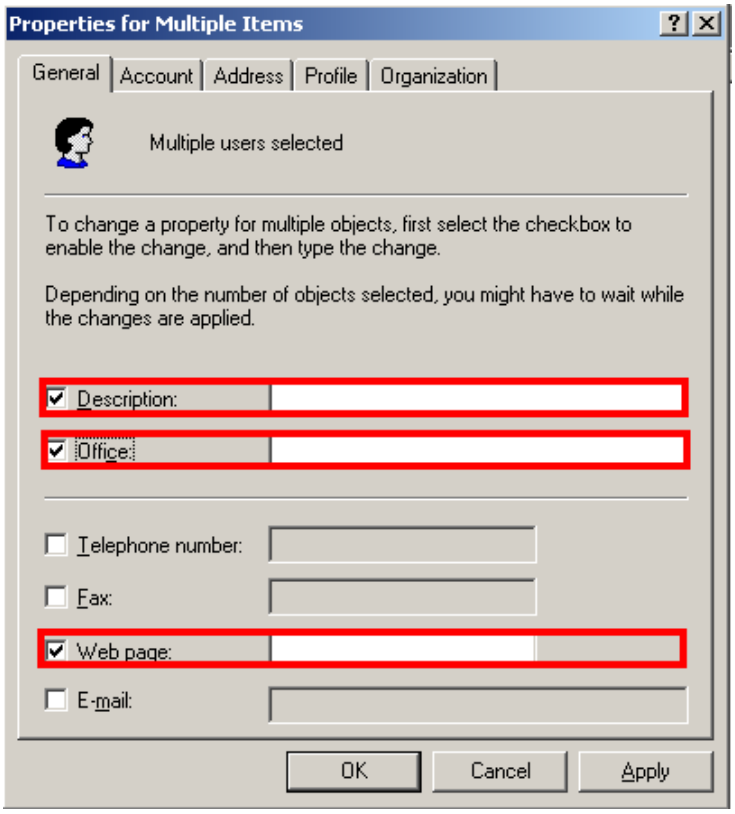

As discussed before, the actual names of the attributes are different than the names that are displayed on the tabs.

Display Name	Attribute Name	Normally Unused
Description	description	Yes
Office	physicalDeliveryOfficeName	Yes
Telephone number	telephoneNumber	No
FAX	facsimileTelephoneNumber	No
Web page	wWWHomePage	Yes
E-mail	mail	No

2. Create Page Limit, Authority and Favorite Operation Groups on the MFP.
   a. Browse to the main web page of the MFP and log in as the Administrator (default password admin).

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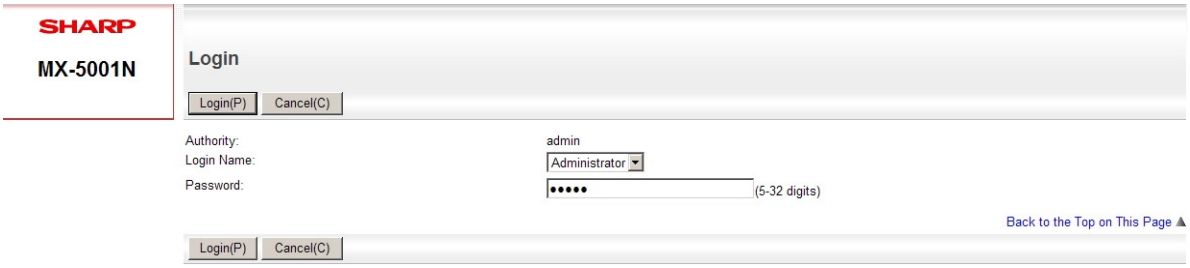
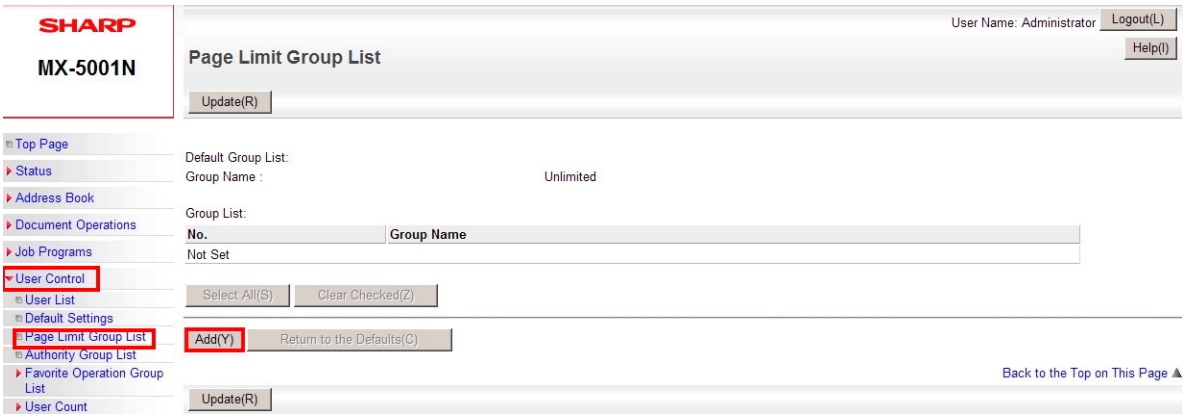
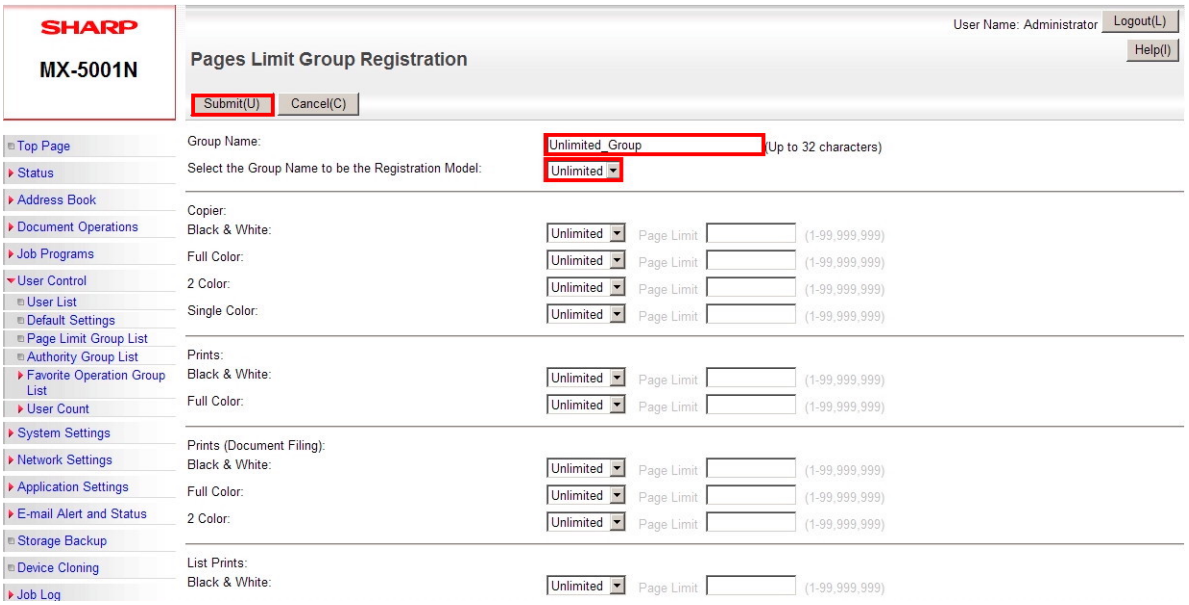


b. Click on the User Control, click on Page Limit Groups List and then click on the Add button when the page below appears.



c. Type in a descriptive name for the group in the Group Name field. In this case, type in Unlimited_Group as this group has no restrictions on page limits. As this is the first group being created, the Registration Model drop down box will be at the default value of Unlimited. Leave all page values at Unlimited and click on the Submit button.

NOTE: Creating an Unlimited_Group is not really required. However, it is done here to make the exercise easier to follow.



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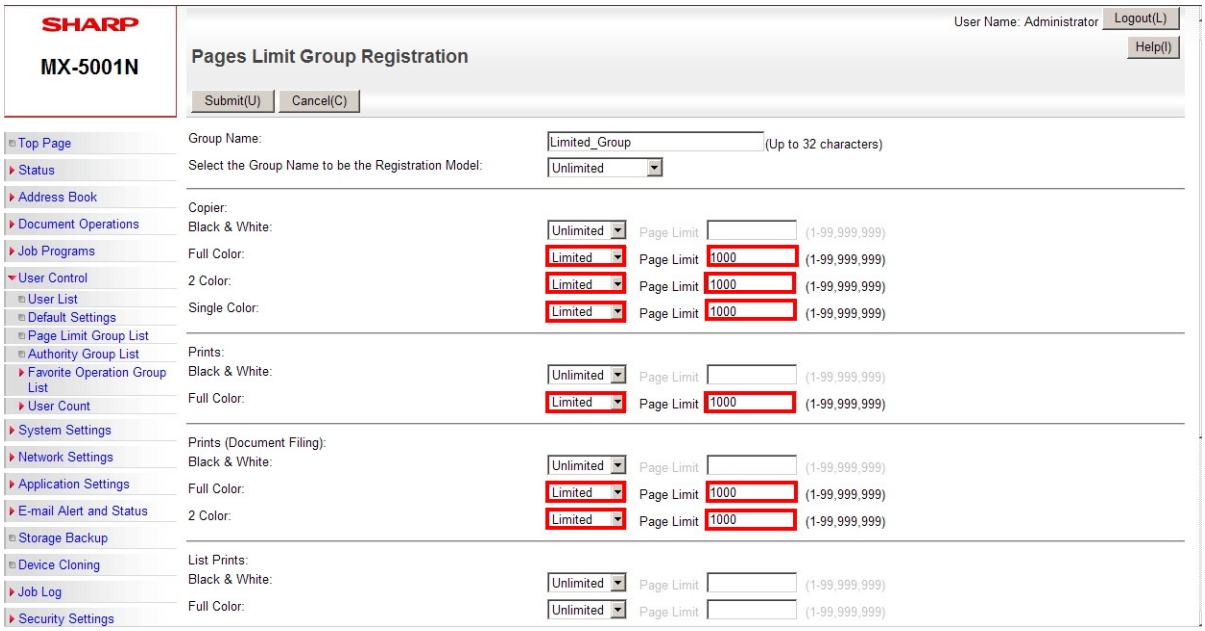
d. At the Page Limit Group List page, click on the Add button to create another group. Next, type Limited_Group for the name of this group. Leave all Black and White Copier, Prints and Prints (Document Filing) as Unlimited. Select Limited for all color modes for printing and copying and set the limit to 1000. Leave List Prints and Scanning at Unlimited. Click on the Submit button when done.



Note that each group name is assigned a group number. These numbers will be used for active directory user attributes to assign page limit restrictions to network users.

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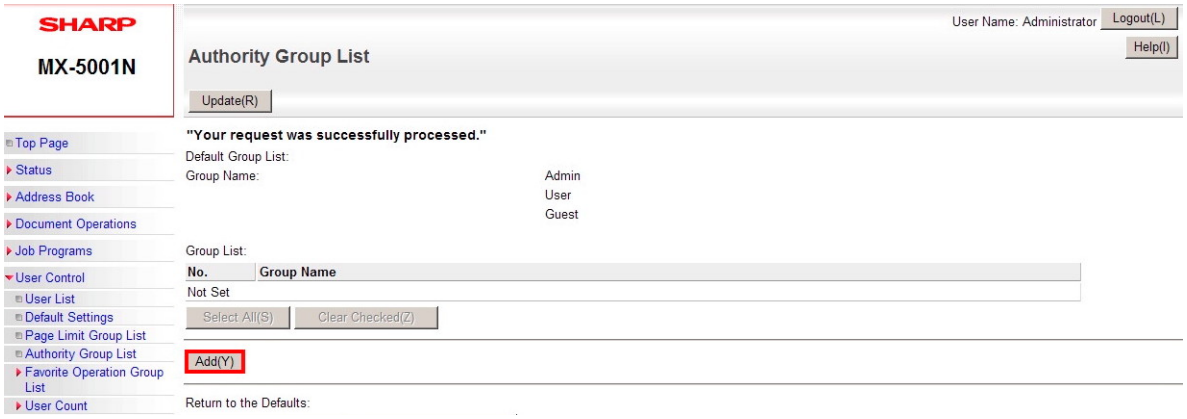
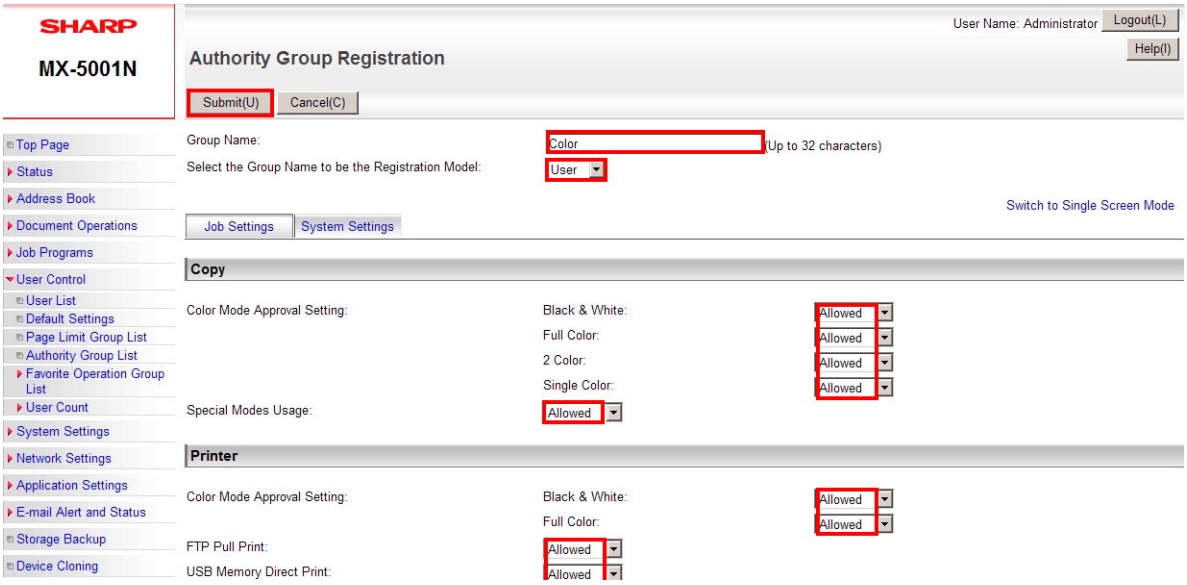
e. Next, click on the Authority Group List and click on the Add button to create the first authority group.



f. Type in Color for the Group Name and select User as the Registration Model. Leave all selections for all modes to Approved and click on the Submit button when done.



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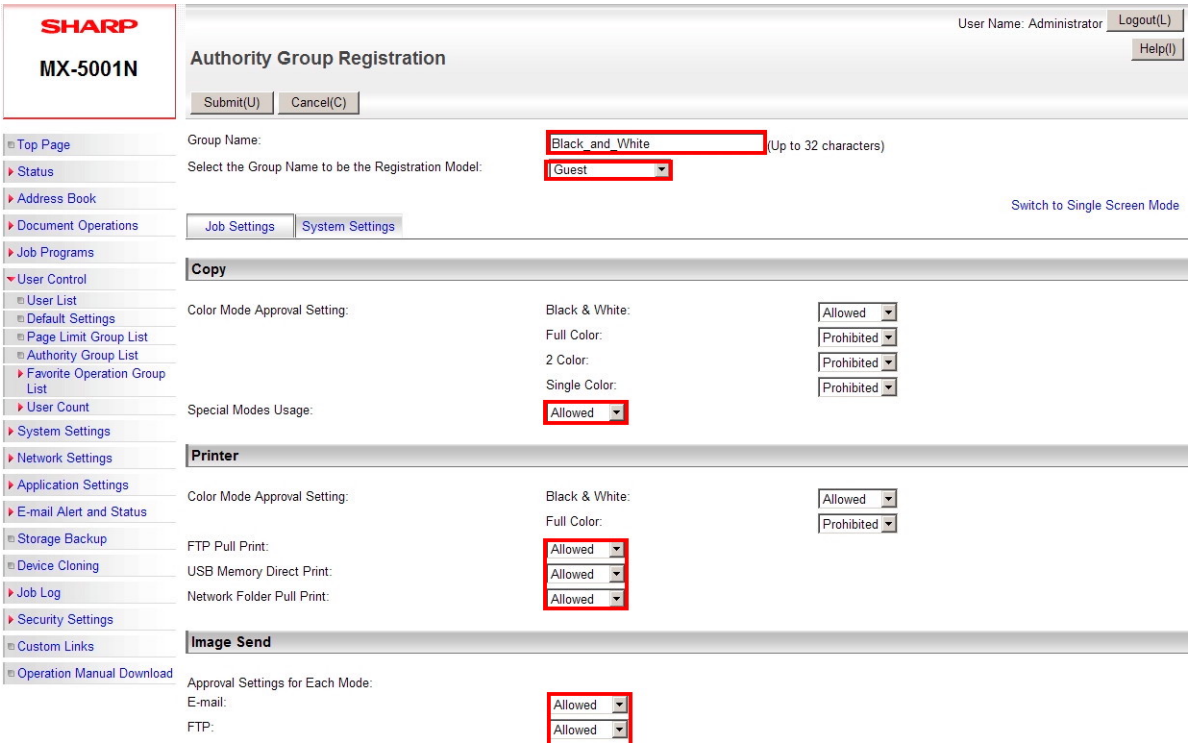
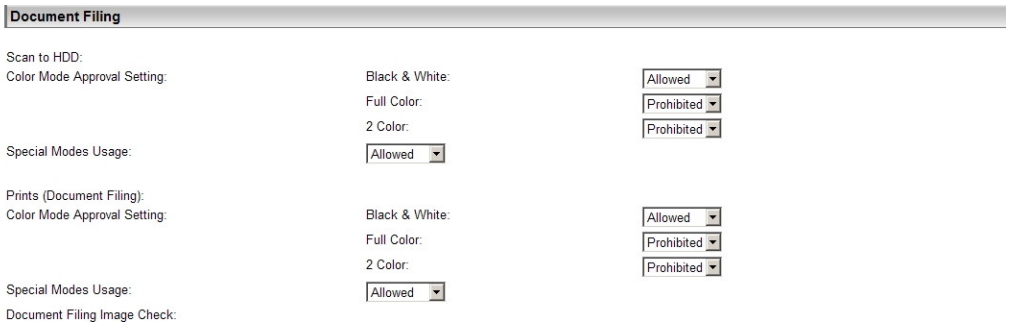
g. Click on the Add button at the Authority Group List page to add the next authority group. Type in Black_and_White as the group name and select Guest as the Registration Model. Ensure that all color modes for copying and printing are set to Prohibited.



h. Under the Document Filing section, select Prohibited for Scan to HDD Color Mode Approval Setting and Prints (Document Filing) Color Mode Approval Setting. Set all other selections on this page to Allowed as this group has access to all MFP functions except printing and copying in color. Click on the Submit button when done.



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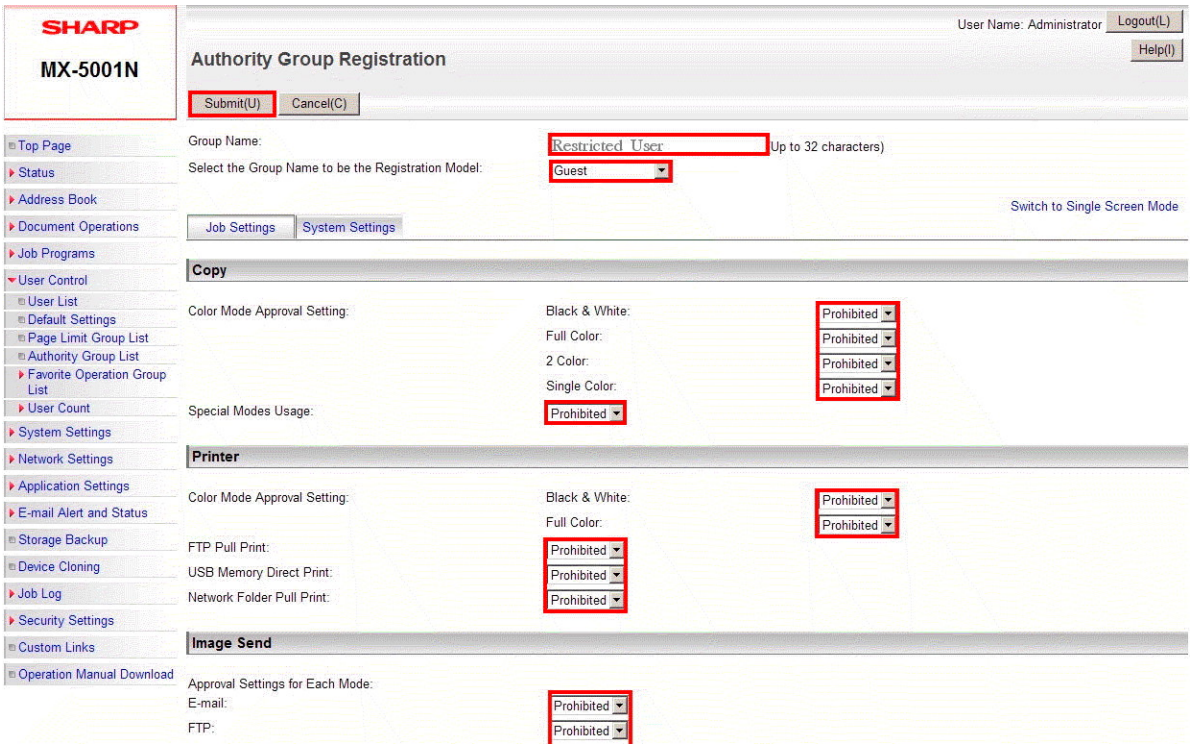
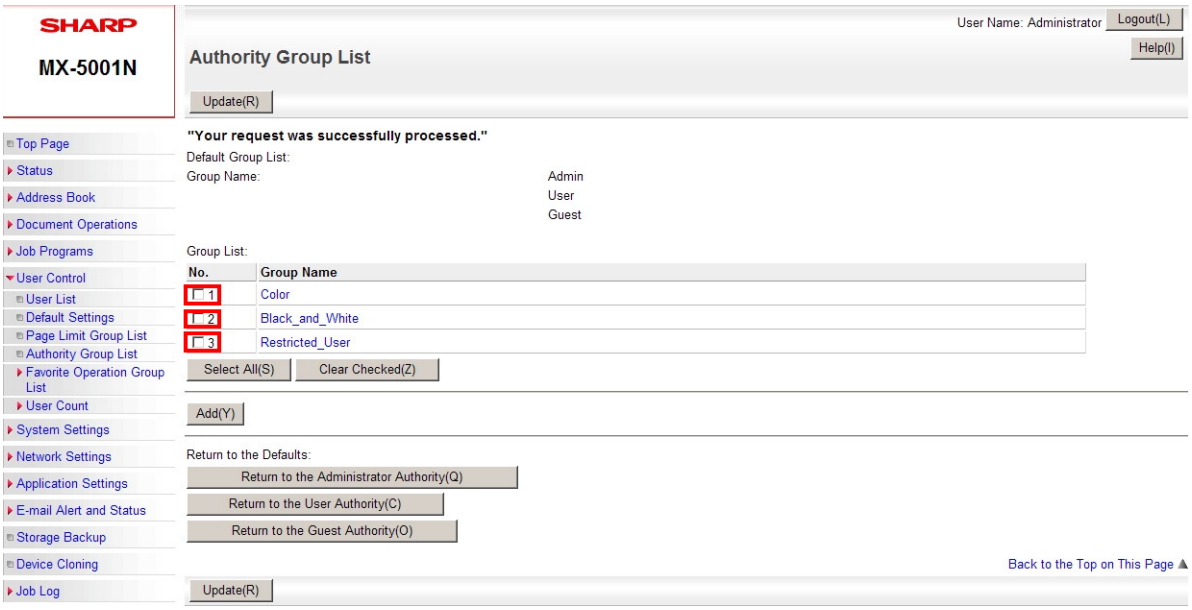
i. Click on the Add button at the Authority Group List page to add the last authority group. Type in Restricted_User as the group name and select Guest as the Registration Model. As this group will be used to prevent unauthorized access to the MFP, set all modes to Prohibited. Click on the Submit button when done.



j. Each authority group name is assigned a group number when created. These numbers will be used with active directory user attributes to control MFP features available to network users.



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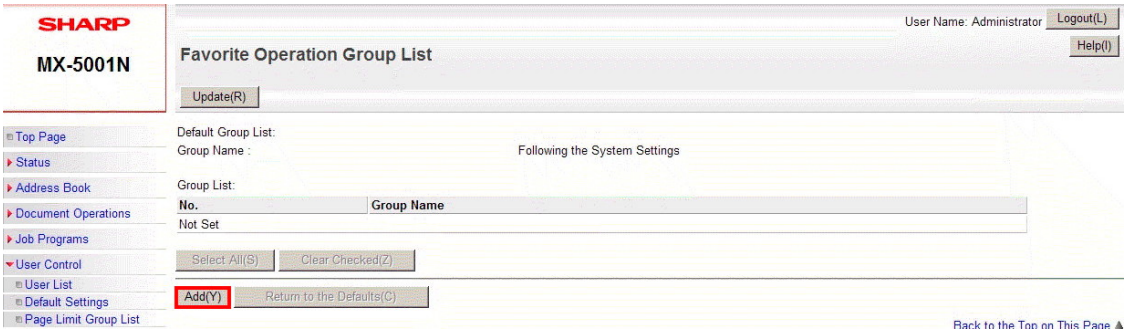
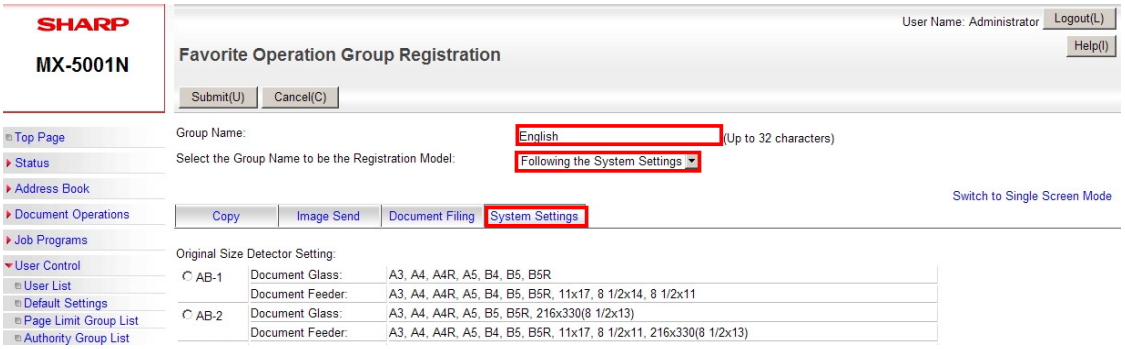
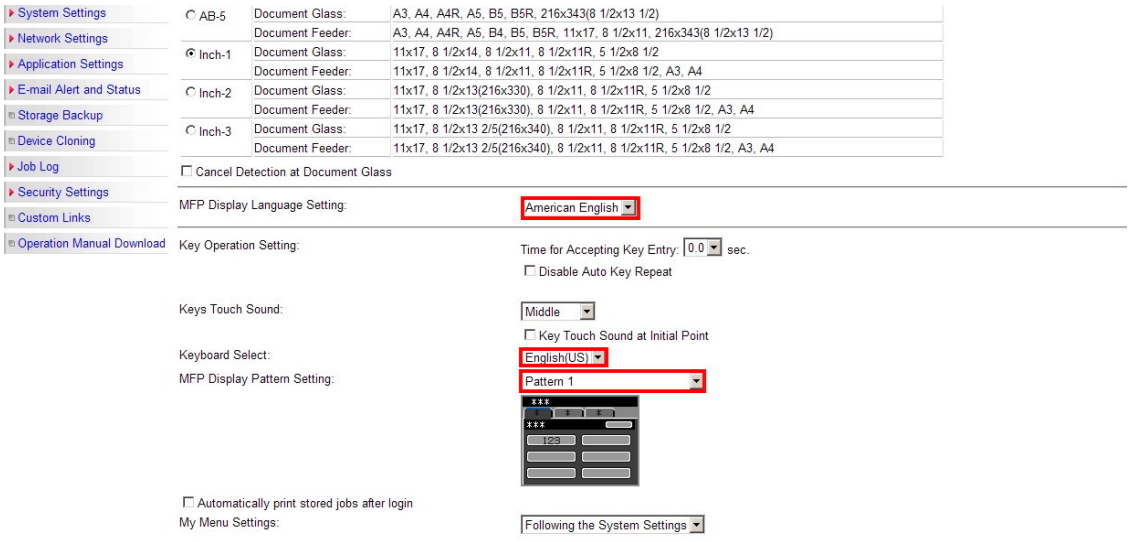
k. Click on the Favorite Operation Group List menu and then click on the Add button to create the first operation group.



l. Type in English for the group name, select Follow the System Settings for the Registration Model and click on the System Settings tab. (As English is the default language used by the MFP, this group does not have to be created but it is included to make the exercise easier to follow.)



m. Scroll down the page until the MFP Display Language Setting selection is seen and ensure American English is selected. For Keyboard Select, select English(US) and set the MFP Display Pattern Setting to Pattern 1. (NOTE: For purposes of this exercise, these are the only changes that will be made although numerous items can be configured for a favorite operation group.) Click on the Submit button when done.



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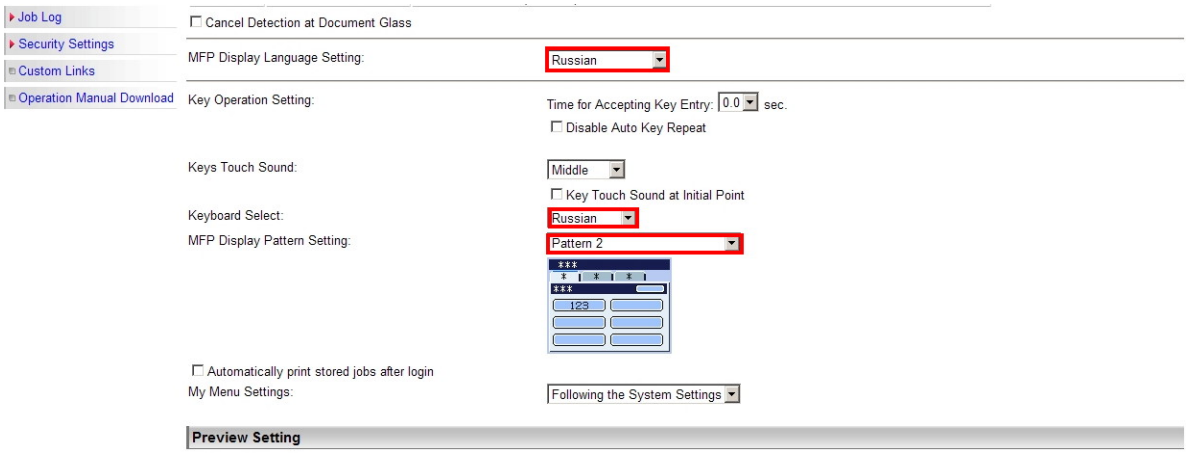
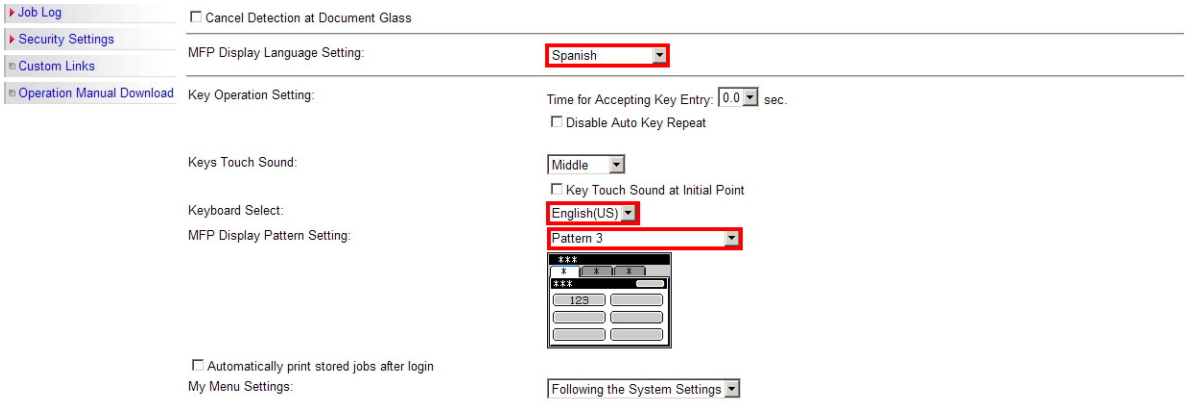
n. Click on the Add button at the Favorite Operation Group List page to create the next operation group. Type in Russian for the group name, select Follow the System Settings for the Registration Model and click on the System Settings tab. Scroll down the page until the MFP Display Language Setting selection is seen and select Russian. For Keyboard Select, select Russian and set the MFP Display Pattern Setting to Pattern 2.Click on the Submit button when done.



o. Click on the Add button at the Favorite Operation Group List page to create the next operation group. Type in Spanish for the group name, select Follow the System Settings for the Registration Model and click on the System Settings tab. Scroll down the page until the MFP Display Language Setting selection is seen and select Spanish. For Keyboard Select, select English(US) and set the MFP Display Pattern Setting to Pattern 3.Click on the Submit button when done.



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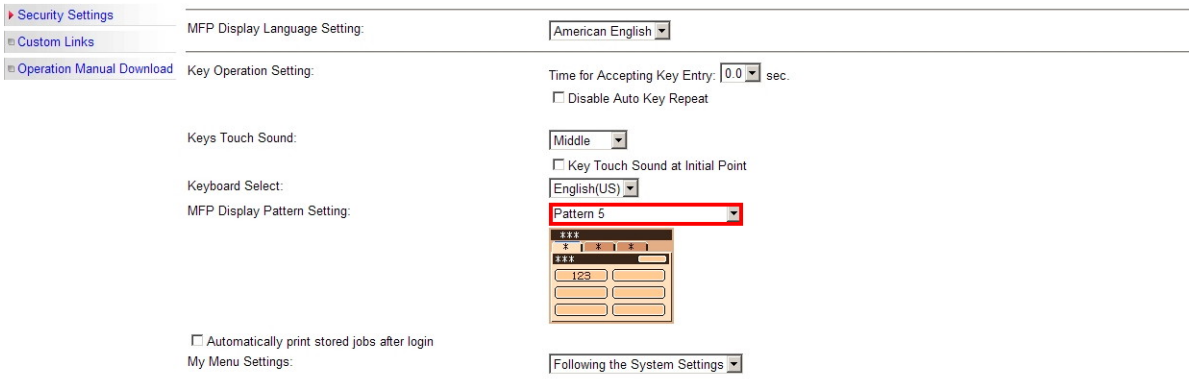
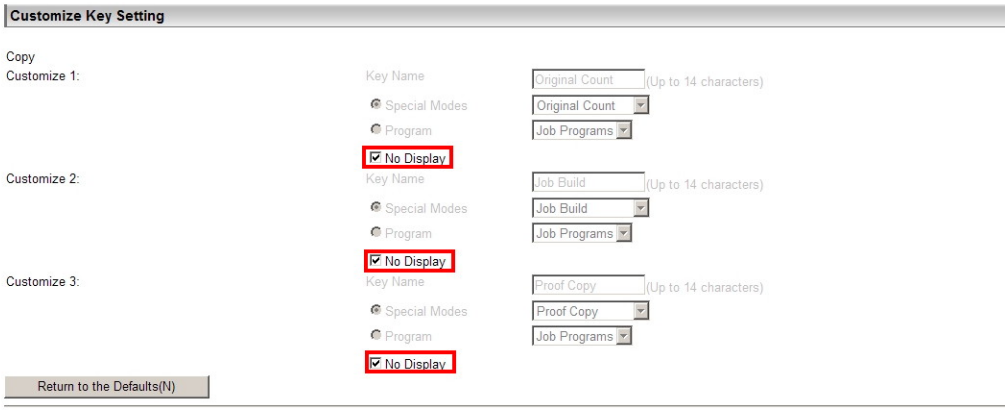
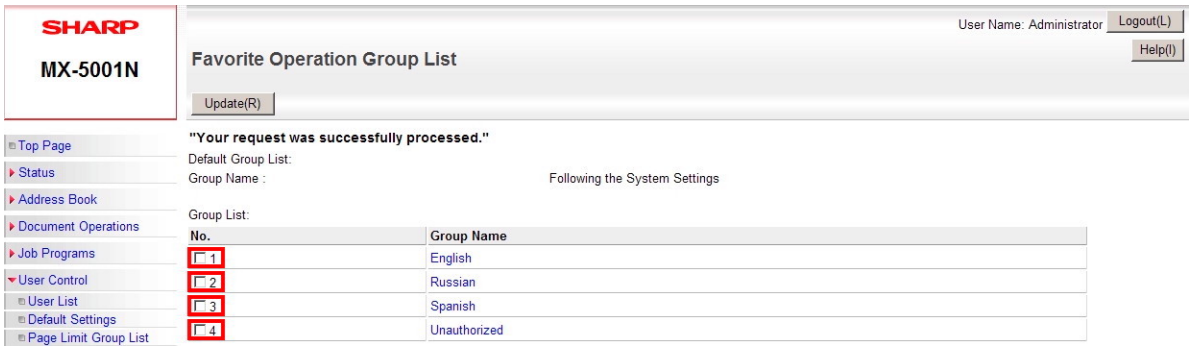
p. Finally, click on the Add button at the Favorite Operation Group List page to create the last operation group. Type in Unauthorized for the group name, select English for the Registration Model and click on the System Settings tab. Scroll down the page and set the MFP Display Pattern Setting to Pattern 5. (This is to provide a visual cue when an unauthorized user logs into the MFP.)



q. Enable the check boxes next to No Display for all custom keys on this page. Click on the Submit button when done.



r. As with all other groups, numbers are assigned to the favorite operations groups. These numbers will be used for active directory user attributes to assign custom display panels to network users.



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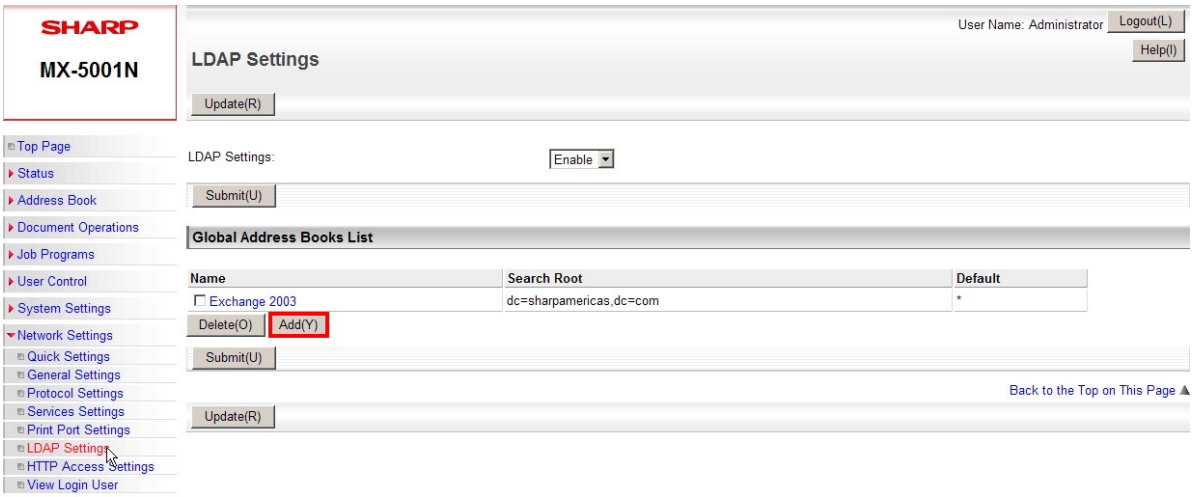
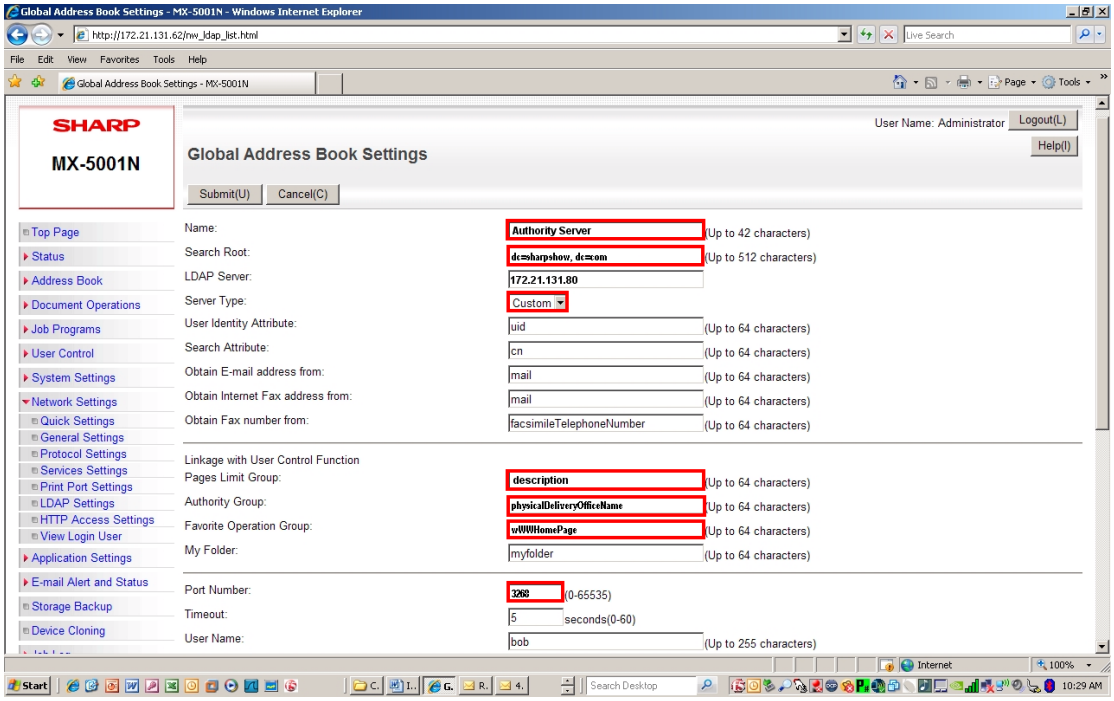
3. Create a new Global Address Book with a Custom LDAP Server on the MFP and link it with User Control Function.

   a. On the main Web page of the MFP, click on Network Settings, click on LDAP Settings and then click on the Add button to create a new Global Address Book.



   b. Fill in the appropriate values for the LDAP server being connected to, select Custom for the Server Type drop down box and enter the attribute names that will be used for Linkage with User Control Function. In this example, the Page Limit Group field is set to description, the Authority Group field is set to physicalDeliveryOfficeName and the Favorite Operations Group field is set to wWWHomePage. Complete the rest of the required LDAP settings and click on the Submit button when done.



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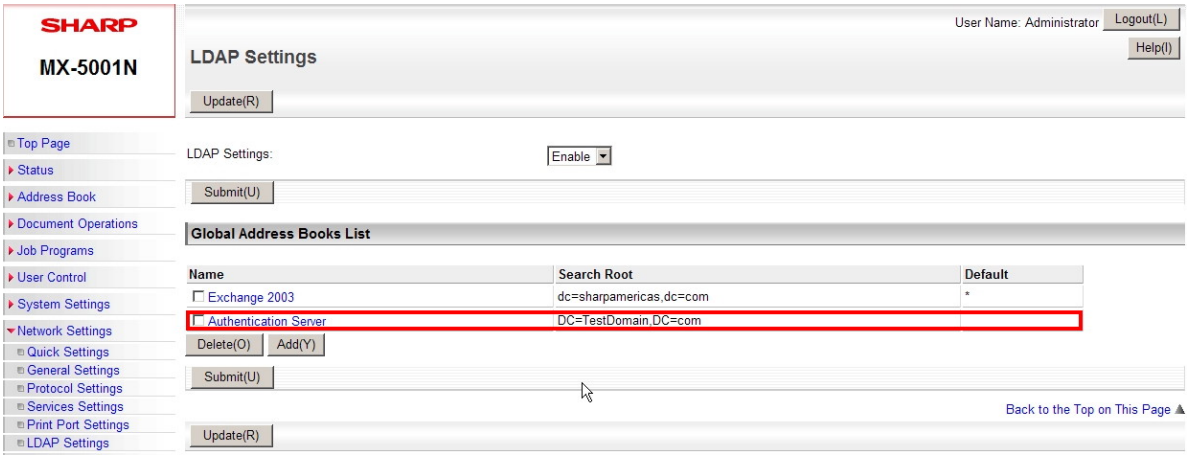
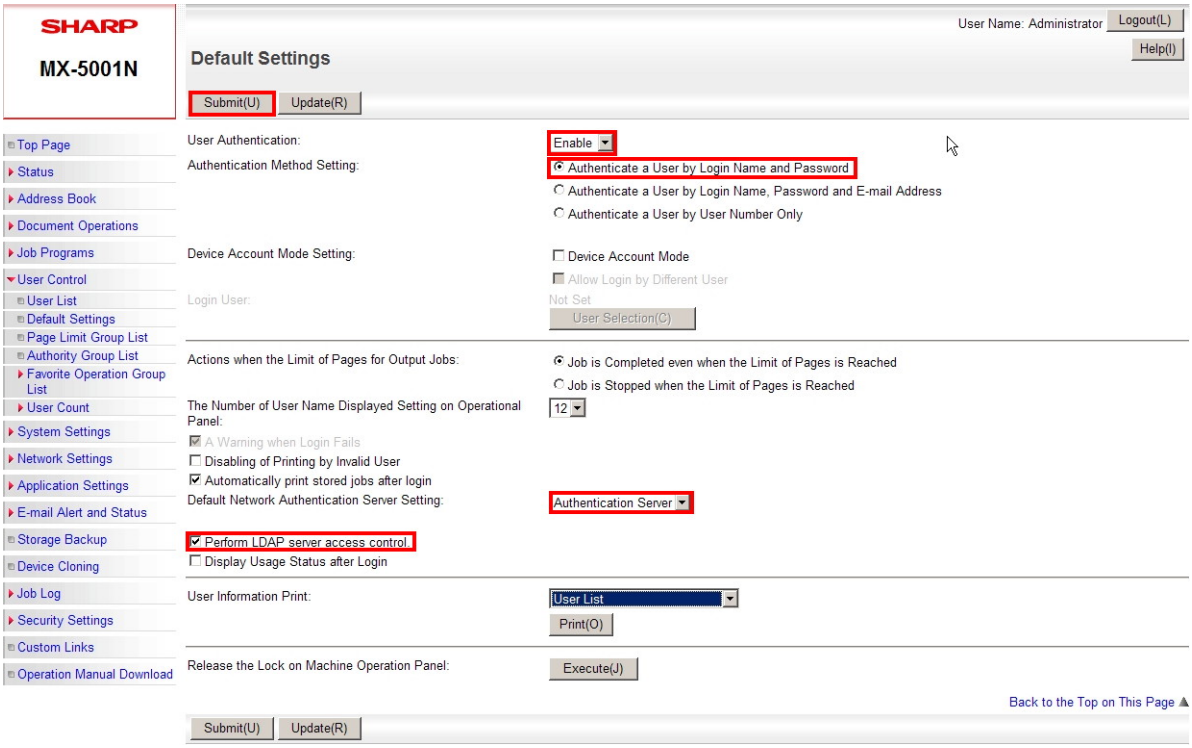
c. The newly created Custom LDAP Server (in this case named Authority Server) is added to the Global Address Book List.



4. Enable User Control on the MFP.

a. On the main Web page of the MFP, click on User Control and then click on Default Settings. Select Enable from the drop down list and click the radio button next to Authenticate a User by Login Name and Password. For the Default Network Authentication Server, select the newly created Global Address Book (in this example Authority Server. Click on the checkbox next to Perform LDAP server access control. Click on the Submit button when done.



b. While the MFP is now setup for network user authentication, the Page Limit, Authority and Favorite Operation Groups settings will not be applied to the user until the user attributes are updated in Active Directory in the next step.

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5. Update user attributes in Active Directory

NOTE: This step should be completed by the network administrator.

In this example, the Page Limit and Authority Groups are applied to users based on their accounts created in the Organizational Unit that corresponds to the department they work in. However, all managers, regardless of department are placed in the Managers organizational unit in Active Directory.

By default, all users are assigned a Favorite Operation Group with the MFP display in English. If the user wants the MFP display to be in Spanish or Russian, they must make a request to the network administrator.

The various group names and index values for the corresponding attributes are shown in the following tables.

Page Limit Groups	
Group Name	Index values to enter into the Description field
Unlimited_Group	1
Limited_Group	2

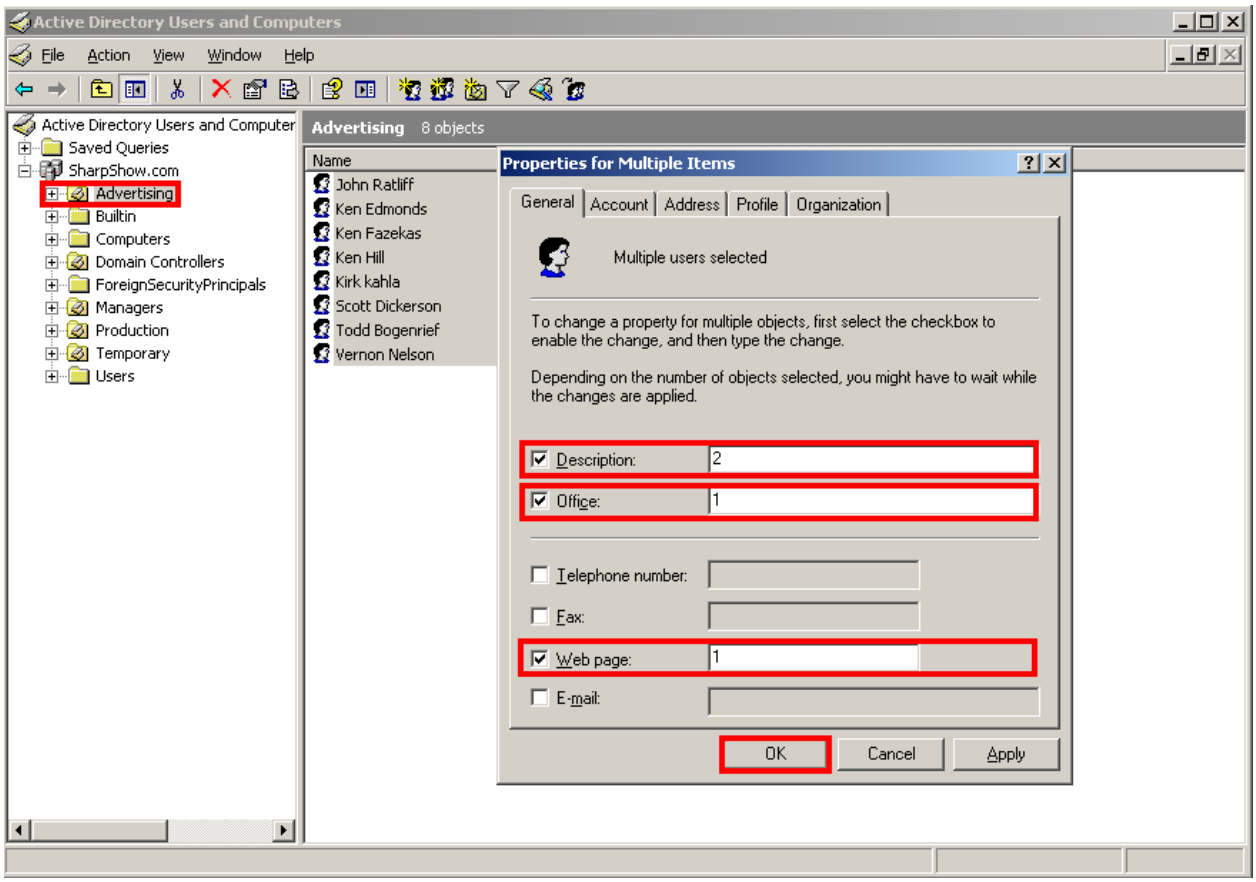
Authority Groups	
Group Name	Index values to enter into the Office field
Color	1
Black_and_White	2
Restricted_User	3

Favorite Operation Groups	
Group Name	Index values to enter into the Web page field
English	1
Russian	2
Spanish	3
Unauthorized	4

Due to the layout of the Active Directory structure and the use of attributes common to all users, rights to the Sharp MFP can be quickly assigned to all users in the network as desired by the company.

a. On the LDAP server, start the Active Directory Computer and User administrative tool and open the first organizational unit where the users are located (in this example, it is the Advertisers organizational unit). Highlight all the users in the organizational unit, right click and select Properties. On the General tab, click on the checkboxes for Description, Office and Web page. Fill in the attribute values appropriate for this group. Click on the OK button when done.

Users in Advertising Organizational Unit		
Display Name	Group Assigned	Value
Description	Limited_Group	2
Office	Color	1
Web page	English	1



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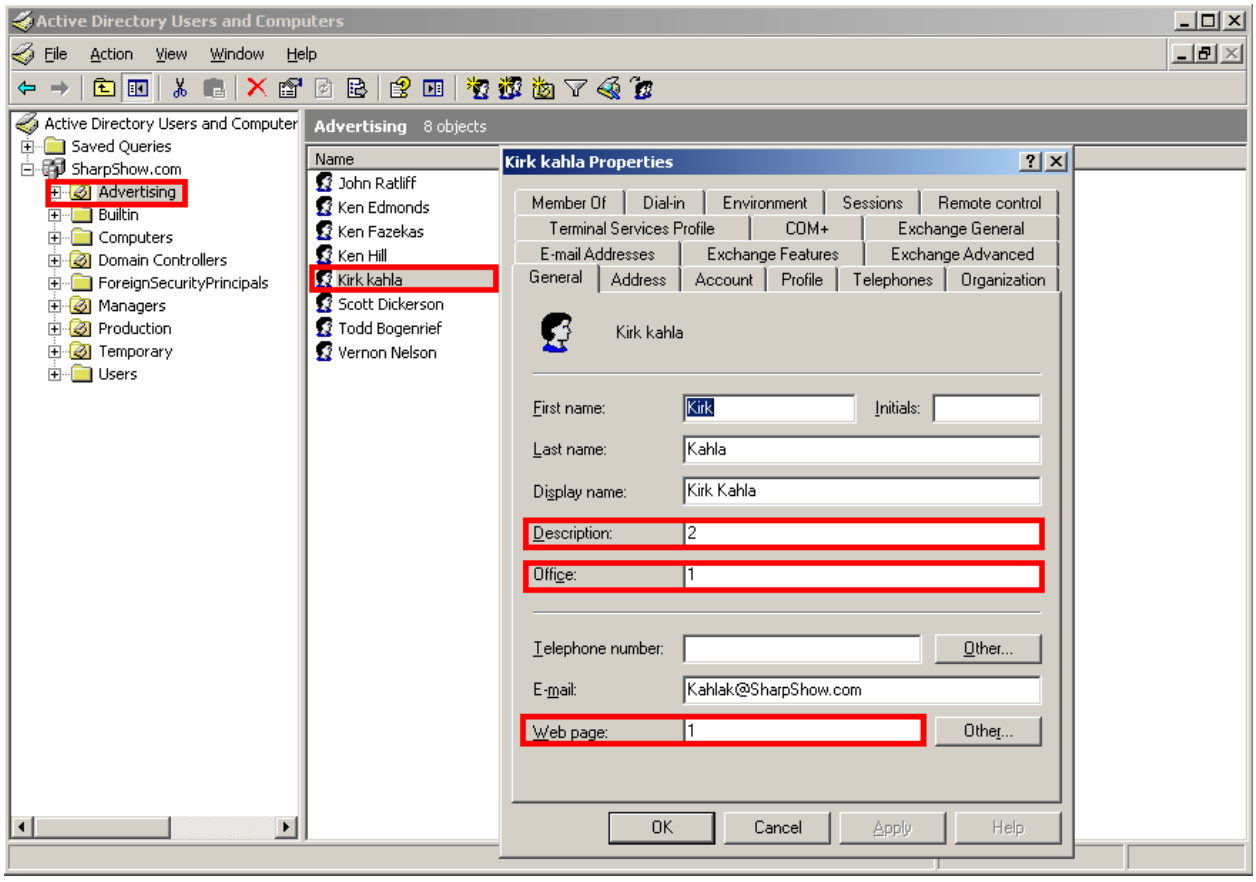
b. All users in the Advertiser organization will be assigned the attribute values just submitted. To verify this, highlight a single user, right click and select Properties. Ensure that the Description, Office and Web page attributes are correct on the General tab. Click on OK when done.



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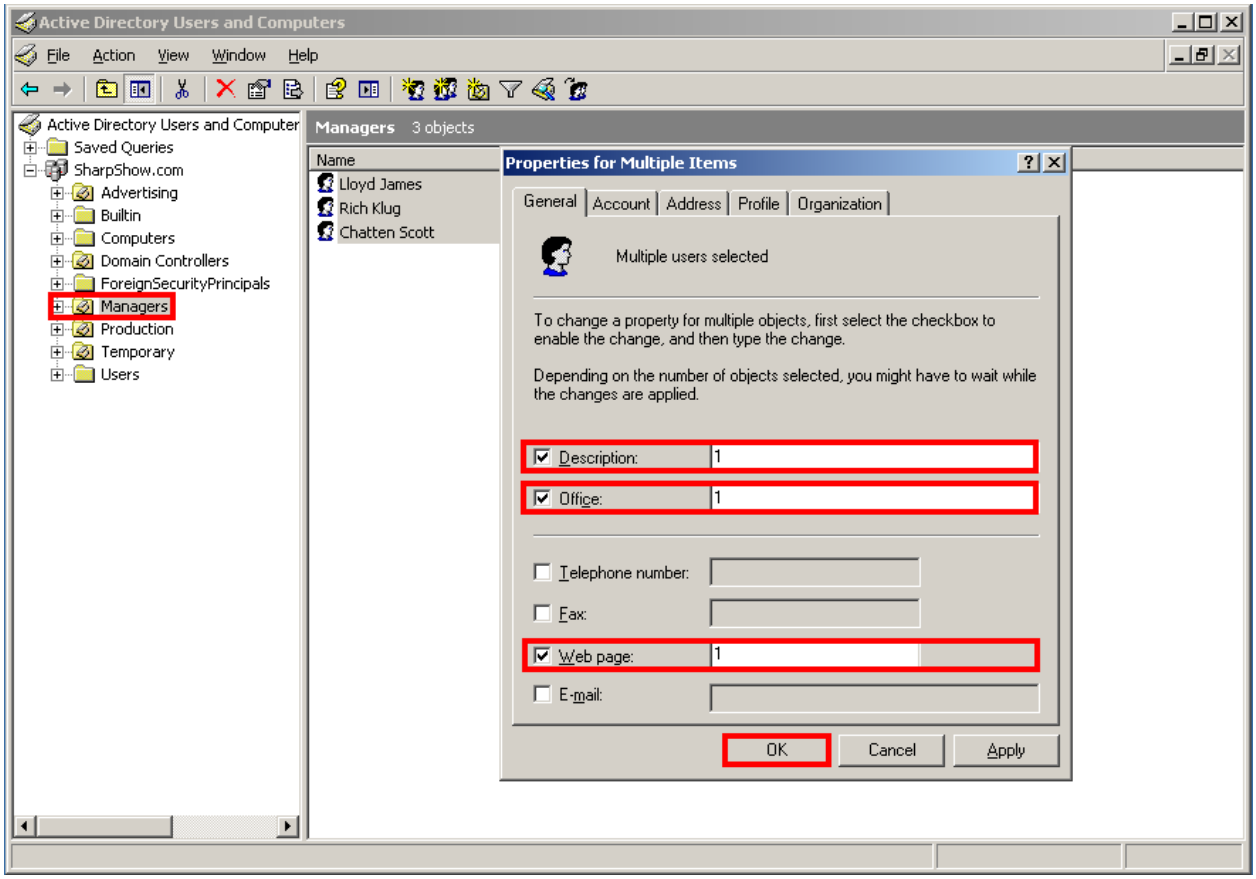
c. Next, open the Managers organization unit. Highlight all the users in this unit, right click and select Properties. On the General tab, click on the checkboxes for Description, Office and Web page. Fill in the attribute values appropriate for the managers as shown below. Click on the OK button when done.

Users in Managers Organizational Unit		
Display Name	Group Assigned	Value
Description	Unlimited_Group	1
Office	Color	1
Web page	English	1



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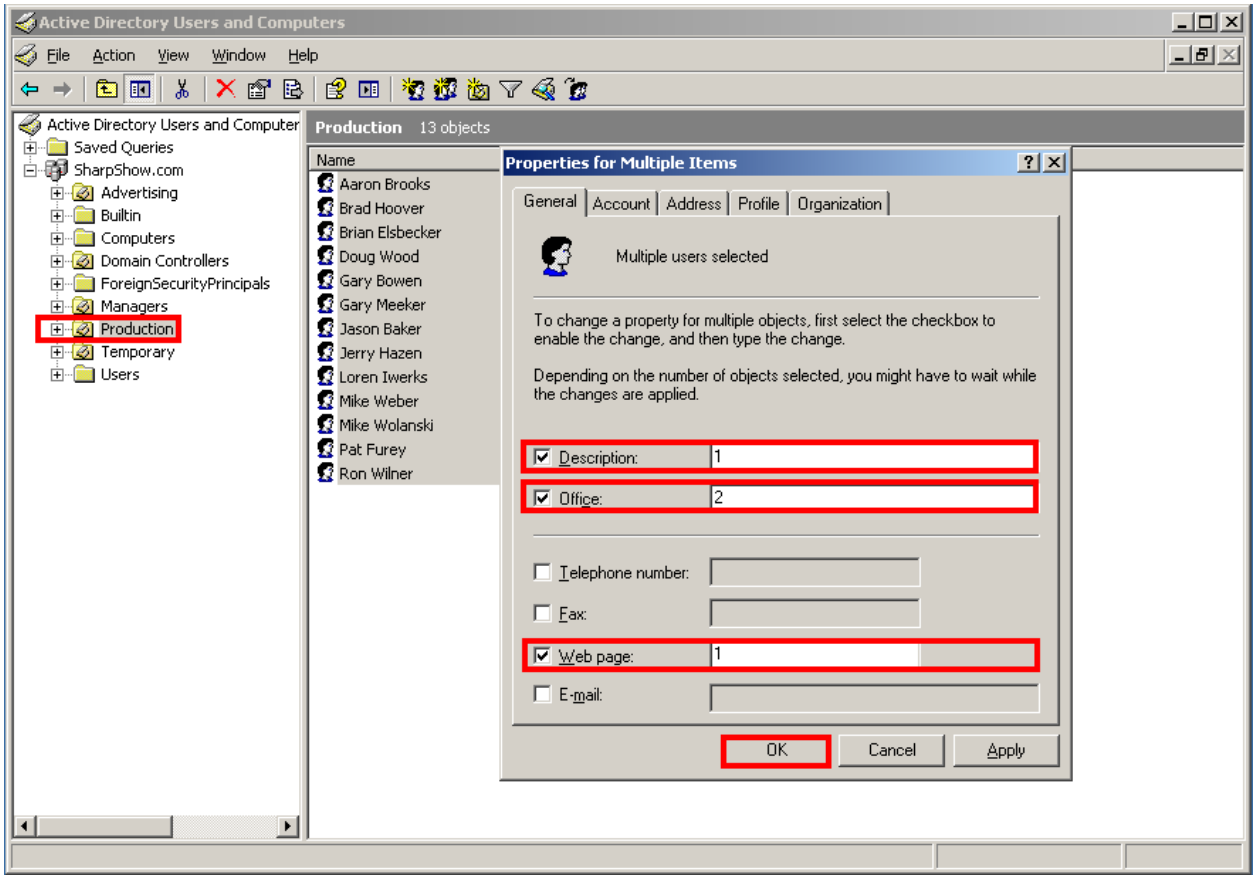
d. Next, open the Production organization unit. Highlight all the users in this unit, right click and select Properties. On the General tab, click on the checkboxes for Description, Office and Web page. Fill in the attribute values appropriate for the staff in the Production unit as shown. Click on the OK button when done.

Users in Production Organizational Unit		
Display Name	Group Assigned	Value
Description	Unlimited_Group	1
Office	Black_and_White	2
Web page	English	1



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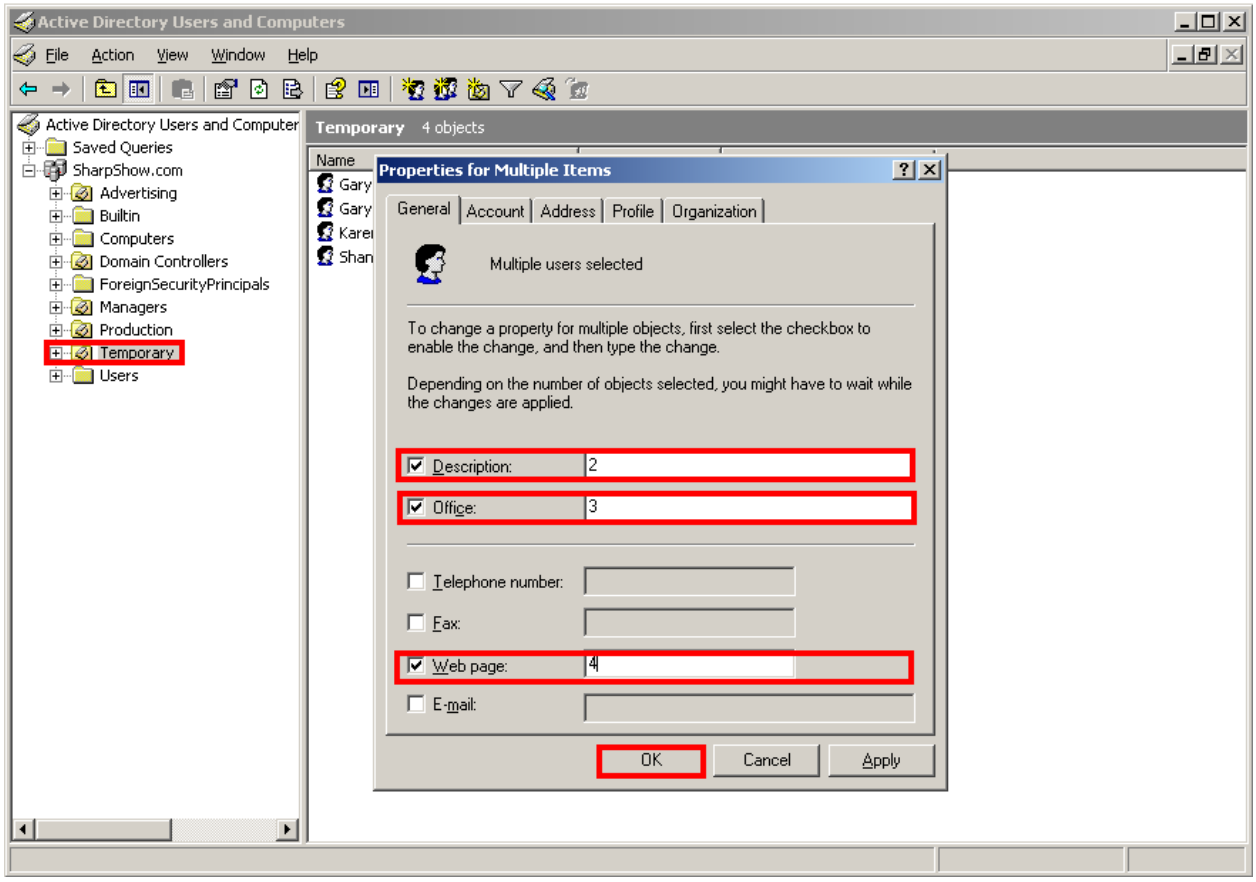
e. Finally, open the Temporary organizational unit. Highlight all the users in this unit, right click and select Properties. On the General tab, click on the checkboxes for Description, Office and Web page. Fill in the attribute values appropriate for the managers as shown below. Click on the OK button when done.

Users in Temporary Organizational Unit		
Display Name	Group Assigned	Value
Description	Limited_Group	2
Office	Restricted_User	3
Web page	Unauthorized	4



f. Changes in display language will have to be done on an individual basis by changing the value in the Web page attribute when requested by the user.

g. After updating the users' attributes, all network users will have their access to the MFP functions restricted as desired by the company. The MFP display will also be in the language requested by that user as shown on Pages 2 and 3 of this document. Test to ensure that the correct display and functions are available to each user group.

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6. Clone User Control, LDAP and Network Settings with Device Cloning.

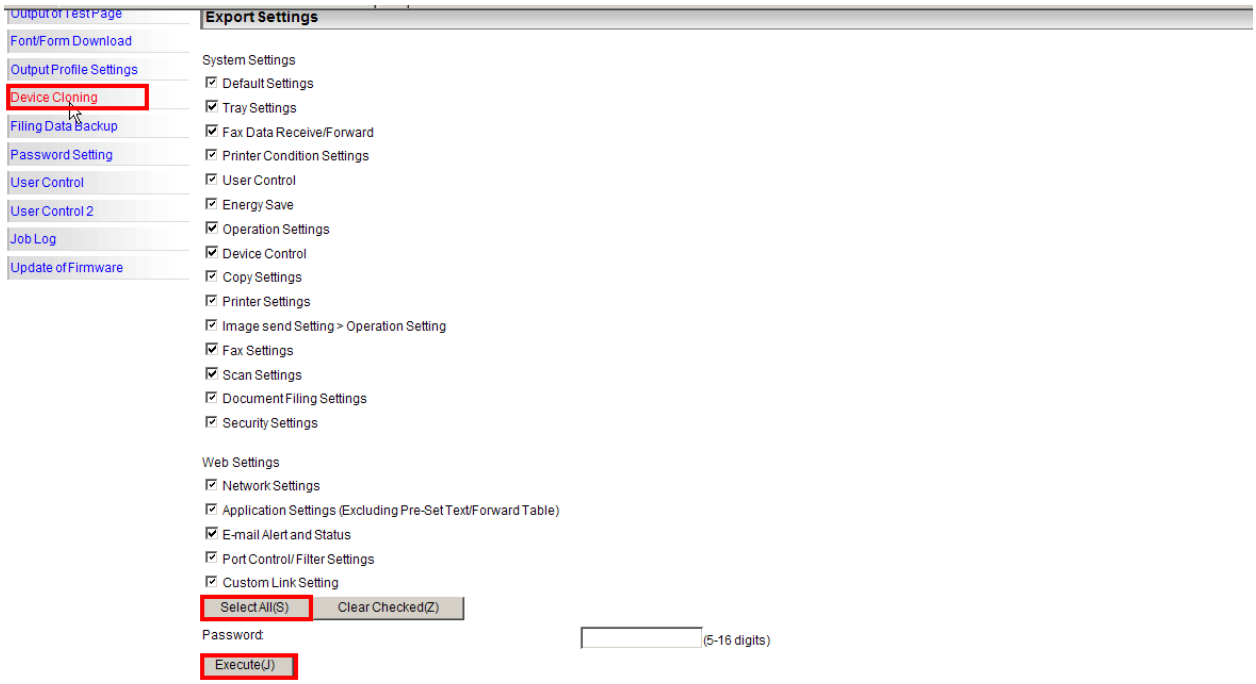
   If additional MFPs in the same network will be using LDAP Server Access Control, use the following procedure to clone the settings required after testing the original unit.

   a. Open the Service Web page of the MFP just configured using the following URL in Windows Internet Explorer:

http://{IP_Address_of MFP}/service_testpage.html

   b. Enter the default password service in the password field and click on the Submit button.

   c. Click on the Device Cloning menu item, click on the Select All button and then the Execute button.



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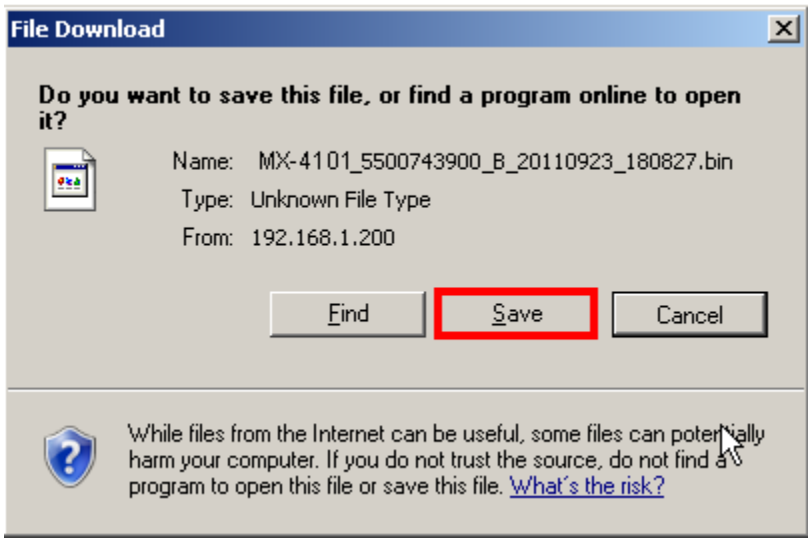
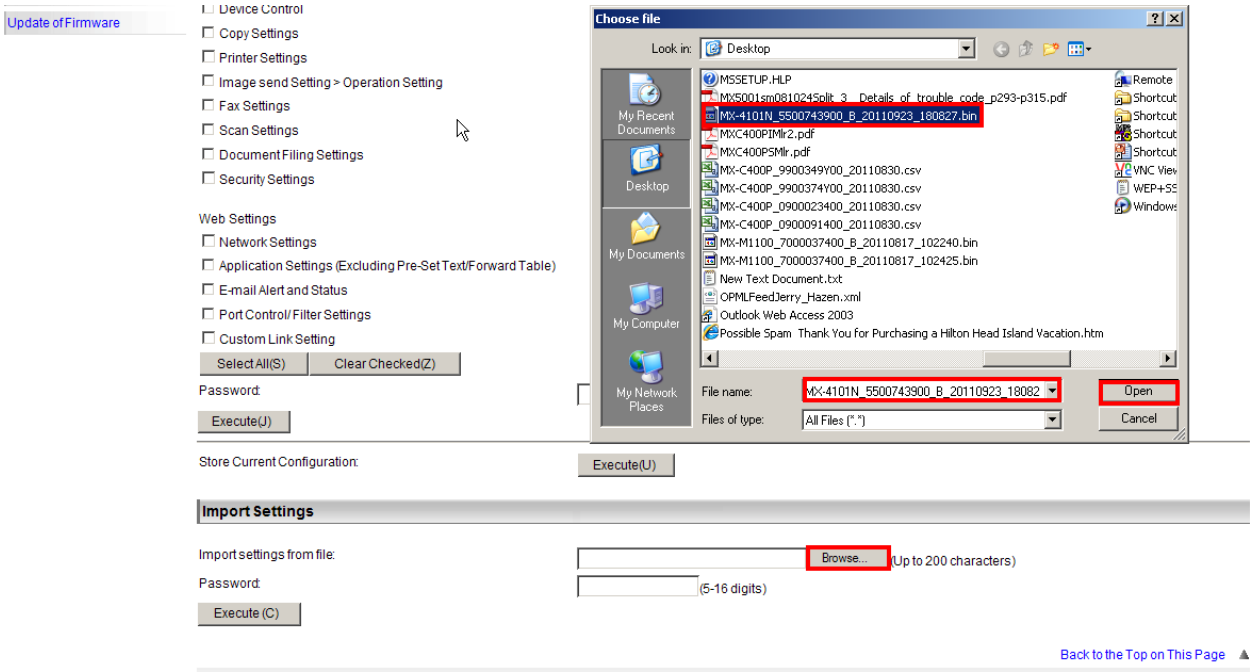
d. Click on the Save button to save the exported *.bin file in a known location on your computer.


File Download
Do you want to save this file, or find a program online to open it?
Name: MX-4101_5500743900_B_20110923_180827.bin
Type: Unknown File Type
From: 192.168.1.200
Find
Save
Cancel
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not find a program to open this file or save this file. What's the risk?

e. Next, log into the Service Web page of the target MFP from the same computer where you saved the *.bin file. Click on the Device Cloning menu item and the click on the Browse button in the Import Settings area. Navigate to the saved *.bin file and click on the Open button.



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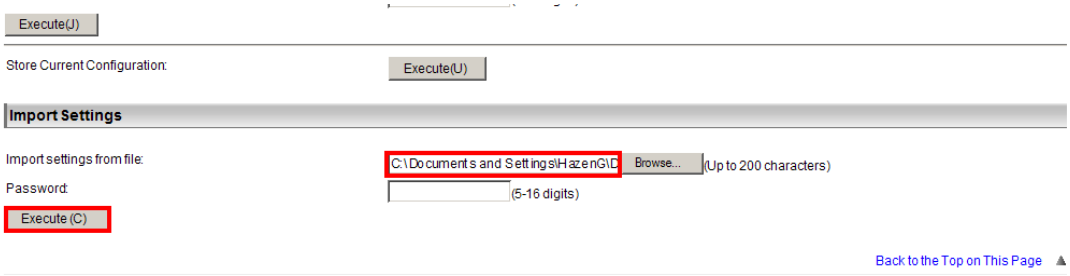
f. Click on the Execute button to import the clone file into the target MFP.



g. Repeat the above steps until all MFPs have the same clone file imported. Now network users will be have the same user experience regardless of which MFP they use in their network.

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MFP

TT-20364

TECHNICAL TIP

Models:	MX-M623U/MX-M753U MX-M623N/MX-M753N
Priority:	Medium
Date:	November 2011
Subject:	**Delay Between Scans**
Symptom:	Scanner is moving after every copy/scan causing delay between jobs
Cause:	Feature Added with New Firmware
Solution:	As the countermeasure for the lines when scanning the data from the document feeder, we have added the mode to search the most uncontaminated scan position.

This feature is ON by default after updating firmware to the version that supports this feature. This feature can be set to only operate at power on only, or turned off completely.
See Bulletin MFP-SB-523 for detailed instructions on how to adjust this feature.

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SHARP

MFP

TT-20374

TECHNICAL TIP

Models: Current MFP Models

Priority: Medium

Date: December 2011

Subject: **Network Scanner Tool Cannot Detect MFP with Auto Detect or Manual**

Symptom: MFP does not show in scanner list.

Cause: Blocked SNMP protocol.

Solution: Network Scanner Tool uses the SNMP protocol to detect the scanner.
Check that the MFP has SNMP protocol allowed under Security Settings – Port Control.
Check for any network hardware or software blocking this protocol.

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MFP

TT-20386

TECHNICAL TIP

Models: All Sharp MFPs

Priority: Medium

Date: January 2012

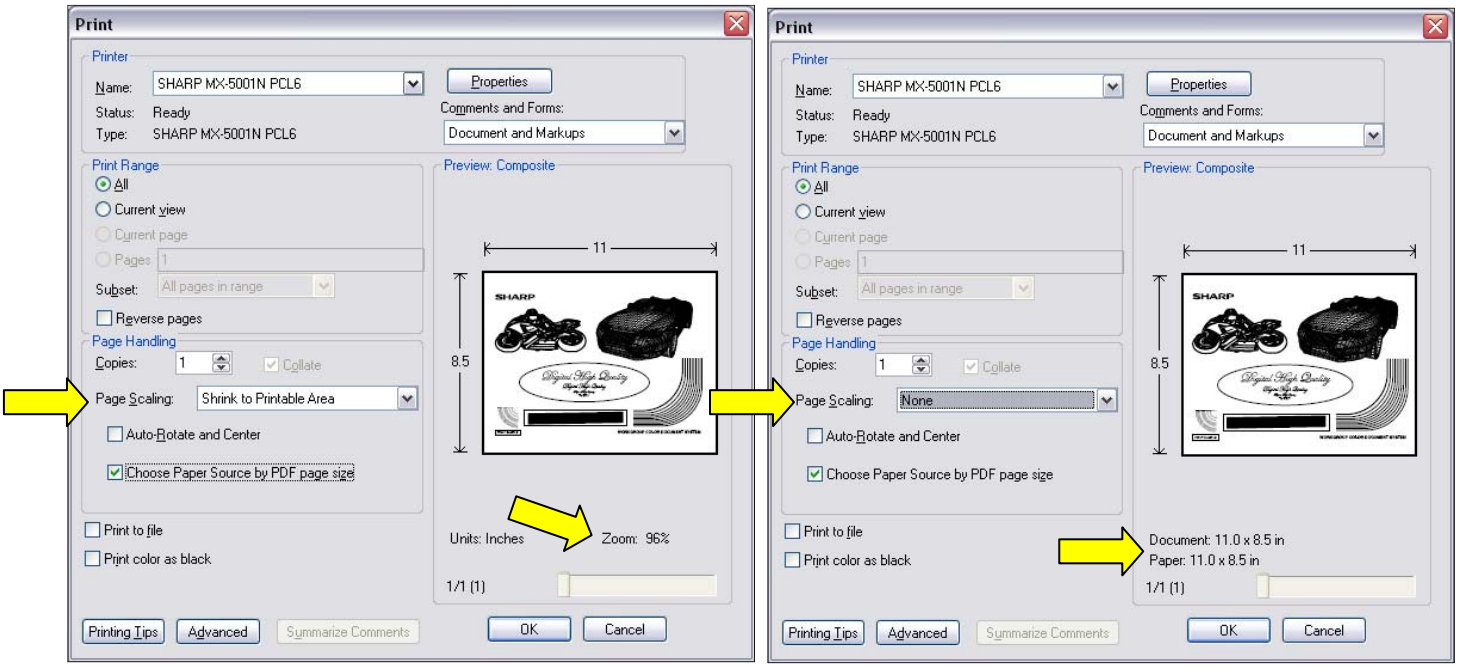
Subject: **Acrobat Reduces Page to 96% when Printing**

Symptom: When Printing from Acrobat, pages are reduced to 96%.

Cause: Page Scaling Setting within Acrobat.

Solution: Change the Page Scaling option to None.

Selecting Shrink to Printable Area or Fit to Printable Area will result in reduction of page to 96%. By selecting None, the document will be printed at full size 100%.



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MFP

TT-20394

TECHNICAL TIP

Models: MX-M623N/MX-M753N/MX-M623U/MX-M753U

Priority: Medium

Date: February 2012

Subject: **Automatic Copy and Printer Calibration**

Details: Please see below and on the following page for instructions on how to perform the Automatic Copy and Printer Calibration

Note: Automatic Copy and Printer calibration should be performed under the following conditions:

1. At installation.
2. At Preventive Maintenance.
3. When process or consumable components have been replaced, such as Drum, Transfer belt, MC Unit, Transfer roller, Fuser Rollers, LSU, or PCS sensor.
4. When firmware has been upgraded.
5. If U2-xx error has been cleared using Simulation 16.
6. If CCD Gamma has been adjusted, especially after cleaning or replacing scanner components.
7. After replacing the MFP, Scanner, or PCU control PWBs or their EEPROMs.
8. Upon the completion of a routine service call.

Machine Set up: The MFP must be adjusted properly to ensure accuracy of the calibration. These adjustments must be done at Installation and Preventive Maintenance. Please refer to the Installation Manual and the Adjustment section of the Service Manual.

Before Calibration: Perform the Copy Quality and Density Check

To ensure accuracy, check the following before performing Automatic Copy and Printer Calibration:

1. Optics. Make sure all optics are cleaned, and calibrate the CCD Gamma as outlined in **ADJ 9-A** and **ADJ 9-B** of the Service Manual.
2. Clean the MC Unit using the cleaning rod. Clean at least three times.
3. Perform the high density image correction forcibly using Simulation 44-6.
4. Perform the half-tone image correction forcibly using Simulation 44-26.
   Note: After replacing Drum or Developer, reset halftone gamma using Simulation 44-27 before running 44-26.
5. When Simulations 44-6 and 44-26 are completed without errors, exit the Simulation mode by pressing the CA key.
6. Confirm Copy Quality by making a copy of the Color Test Chart (UKOG-0326FC11).

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Automatic Color Copy and Printer calibration (Combined) Simulation 46-74

In most cases, you should be able to run Simulation 46-74 and perform Copy and Printer calibration at the same time. In some cases, you may wish to perform these adjustments separately, using Simulations 46-24 for Copy mode, and 67-24 for print mode.

1. Select a Factory Color Balance Target (If desired) before performing automatic calibration, you can select a new Factory Definition. Normally, DEF 1 should be selected.
   - Use Simulation 63-11 to select a new definition for Copy mode (Default is DEF 1)
   - Use Simulation 67-26 to select a new definition for Printer mode (Default is DEF 1)

2. Unless a Manual calibration has been performed previously, it is highly recommended to match the Service Target to the Factory Target.
   - Use Simulation 63-08 to match the Service Color Balance Target to the currently selected Factory Color Balance Target for Copy mode
   - Use Simulation 67-28 to match the Service Color Balance Target to the currently selected Factory Color Balance Target for Printer mode.

3. Perform Copy/Printer Color Balance and Density Adjustment using Simulation 46-74 (**ADJ 21-F**).

a) Make sure that 11 x 17" Hammermill Color Copier paper is loaded in one of the paper trays. (If other type 11 x 17" paper is loaded in other trays, either remove the paper or open the trays so the correct paper is used during calibration)
b) Enter Simulation 46-74 and press EXECUTE. A test page is generated. Place the test page on the exposure glass face down with the thin line to the left. Place 5 blank pages of 11 x 17" paper on top of the test page and lower the RSPF/DSPF.
c) Select FACTORY and press EXECUTE on the Display. The test page is scanned, and a reference page is printed (this page is for visual inspection only and is not intended to be placed on the glass). If no error messages occur, Copy calibration is complete.
d) Press EXECUTE to begin printer calibration. A test page is generated. Place the test page on the exposure glass face down with the thin line to the left. Place 5 blank pages of 11 x 17" paper on top of the test page and lower the RSPF/DSPF.
e) Select FACTORY and press EXECUTE. The test page is scanned, and a reference page is printed (this page is for visual inspection only and is not intended to be placed on the glass). If no error messages occur, Printer calibration is complete. Press OK on the display. Copy and Printer calibration values are entered into memory.
f) The display will read "Please Quit this Mode" press the CA key to exit Simulation 46-74.

4. Confirm Copy Color Balance by making a copy of the Color Test Chart (UKOG-0326FC11).

5. Confirm Printer Color Balance by printing a PCL test print using Simulation 64-5.

This concludes Combined Copy and Printer Calibration using Simulation 46-74.

SHARP

MFP

TT-20395

TECHNICAL TIP

Models: MX-M623N/MX-M753N/MX-M623U/MX-M753U

Priority: Medium

Date: February 2012

Subject: **MFP Calibration Checklist**

Symptom: Image quality problems occur

Cause: MFP is out of adjustment

Solution: Refer to the following checklist

In order for calibration to be accurate, the following adjustments should be performed or checked at Install or PM. (Refer to the adjustment section of the Service Manual for details):

1. **ADJ 1-A** Confirm Doctor Blade gap is in specification (Must be .040mm to .046mm).
2. **ADJ 1-B** Confirm Main Pole position is in specification (Must be 18.5mm to 19.5mm).
3. **ADJ 1-C** Toner Density (Simulation 25-2 at install or PM)
    - Door must be left open to prevent change in DV/toner mixture until ready to press EXECUTE.
    - Must remove all DV material with vacuum before installing new DV at PM.
    - Must use CA key to lock in values when Simulation 25-2 is completed.
4. **ADJ 2A** Main Charge Grid Voltage (Simulation 8-2) Measure at CN2 pin 3.
5. **ADJ 2B** DV Bias Voltage (Simulation 8-1) Measure at CN2 pin 7.
6. **ADJ 2C** Transfer Current (Simulation 8-6) – Confirm values in Simulation 8-6 are set to default.
7. **ADJ 3** Image Skew adjustment (Black) Simulation 64-2
8. **ADJ 9A** CCD calibration OC MODE
    - 63-3 using SIT chart (UKOG-0280FCZ1) is more accurate, and is recommended.
    - 63-5 set to default if SIT chart is not available
9. **ADJ 9B** CCD Calibration DSPF MODE
    - 63-3 using SIT chart (UKOG-0280FCZ1) is more accurate, and is recommended.
    - 63-5 set to default if SIT chart is not available
10. **ADJ 9C** Shading Adjustment - use the shading adjustment sheet UKOG-0333FCZZ

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SHARP

MFP

TT-20405

TECHNICAL TIP

Models: MX-FXX2 • Option for:
MX-2600N/MX-3100N
MX-4100N/MX-4101N/MX-5001N
MX-M283N/MX-M363N/MX-M453N/MX-M503N
MX-M363U/MX-M453U/MX-M503U
MX-M623N/MX-M753N
MX-M623U/MX-M753U

Priority: Medium

Date: March 2012

Subject: **Communications Errors NG and ComE when Sending or Receiving**

Symptom: Not able to send or receive due to communication errors.

Solution: Slow down modem speed and turn off jbig and v.34 speed.

Set the switches as shown below:

Switch 27 set bits 1-8 to: 00111111

Switch 28 set bits 1-8 to: 11111101

Switch 29 set bits 1-8 to: 00000101

If problems continue turn on the protocol monitor with switch 37 set bit 1 to: 1 to print always and then contact the hotline with this print out.

Note: Always use the phone line that is packaged with the option. This is a 2 wire line that has a red and green wire for tip and ring. Multiple wire phone lines can cause communication issues. Also never share this phone line with any other device.

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MFP

TT-20412

TECHNICAL TIP

Models: MX-M283N/MX-M363N/MX-M453N/MX-M503N
MX-M623N/MX-M753N
MX-4100N/MX-4101N/MX-5001N
MX-2610N/MX-3110N/MX-3610N
MX-4110N/MX-4111N/MX-5110N/MX-5111N

Priority: Medium

Date: April 2012

Subject: **Authentication and Access Control with Active Directory and HID Cards**

Description: MFP users can now be authenticated and controlled using HID access cards and card readers.

Details: See the instructions and examples on the following pages to see how to set up the HID card and card reader with Active Directory.

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Network Login Using a USB HID Card Reader with the Aries and Virgo MFP

On the Sharp C-Jupiter II, Jupiter III, Dragon III, Aries and Virgo series MFPs, you can link authority groups, favorite operation groups and page limit groups to unused attribute fields in individual user records in active directory. By using a Custom LDAP address book with LDAP Server Access Control for authentication, network users can be controlled in the same fashion as was previously possible only with local MFP accounts.

However, the Aries and Virgo series have a new field (Card ID) added to the LDAP Server Access Control settings that extends this capability to users with HID cards. This allows them to login into the MFP using network authentication via a HID card!

Using an HID card has several advantages over the normal network authentication method using network user names and passwords:

- The user is authenticated at the MFP to the network with a single card swipe without having to type in a password.
- The user is authenticated at the MFP to the network, even if the user's network password has changed.
- Users without a HID card cannot log into the MFP, even if the user has a network user name and password.
- Users with HID cards cannot log into the MFP if the card IDs have not been entered in to the users' records in Active Directory.
- Once the users HID cards are authenticated to the network for the first time, the users can still log into the MFP with their same permissions when the LDAP server is not available.
- Printing, copying and scanning permissions are granted on login based on the entries in the users' records in Active Directory.
- This method requires no users be created or HID cards registered on the MFP.

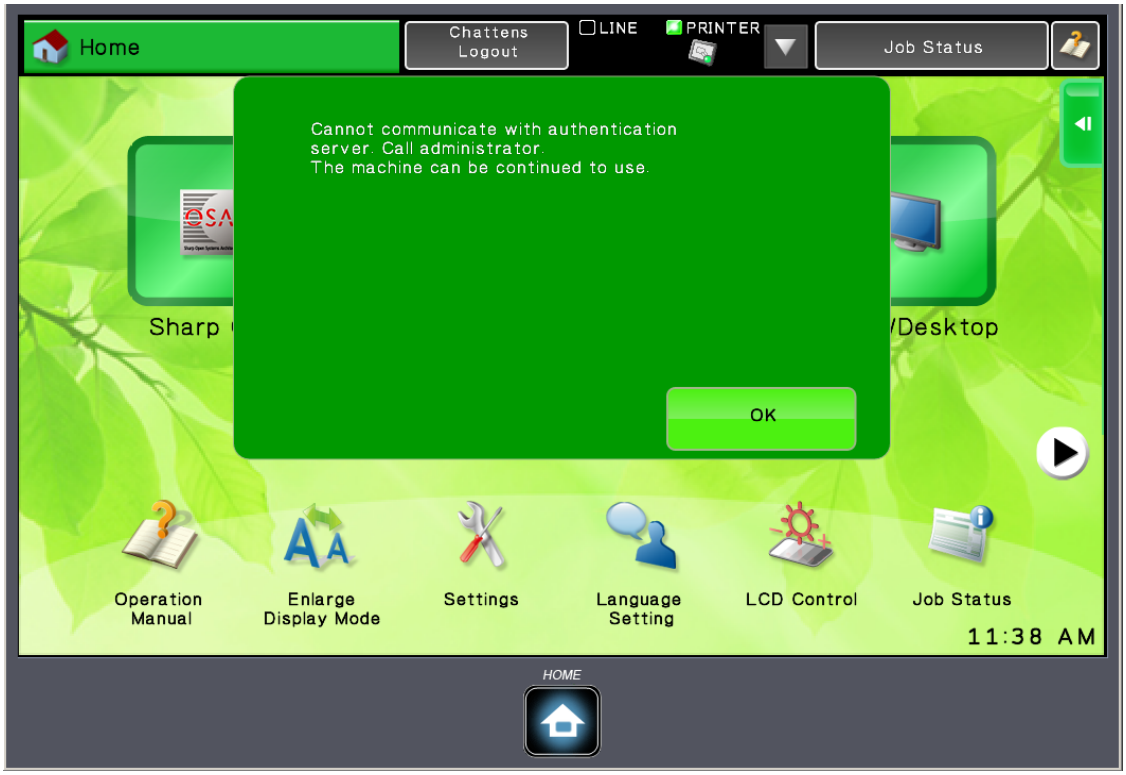
The following pages show logon screens seen when using HID cards with different permissions in Active Directory using the Linkage with User Control Function on the Aries or Virgo MFPs.

A. User granted full control for Color and Black and White mode operations.

B. User granted only Black and White mode operations.

C. User prohibited from using any functions of the MFP.

D. Screen presented when the LDAP server is not available for a user granted full control. (Pressing the OK button allows access to the MFP panel.)

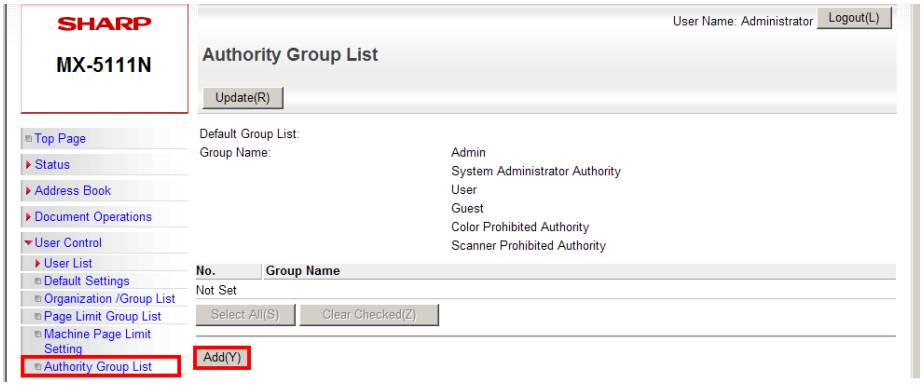


The following are the steps used to create the custom LDAP server with LDAP Server Access Control with a HID card for network authentication on a Sharp MX-5111N that produced the screens shown above.

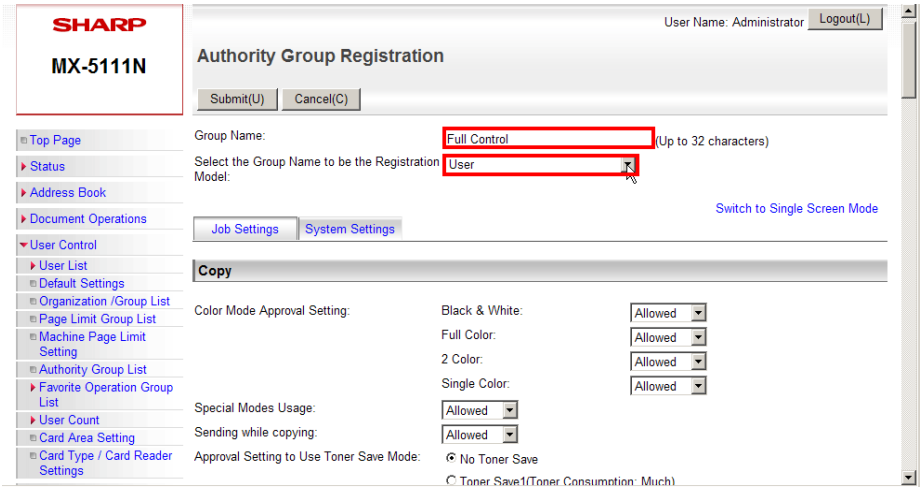
NOTE: It is assumed that the MFP has been previously installed and properly configured in the network. Further, full administrative access and knowledge of Active Directory is available.

A. Create Authority Groups

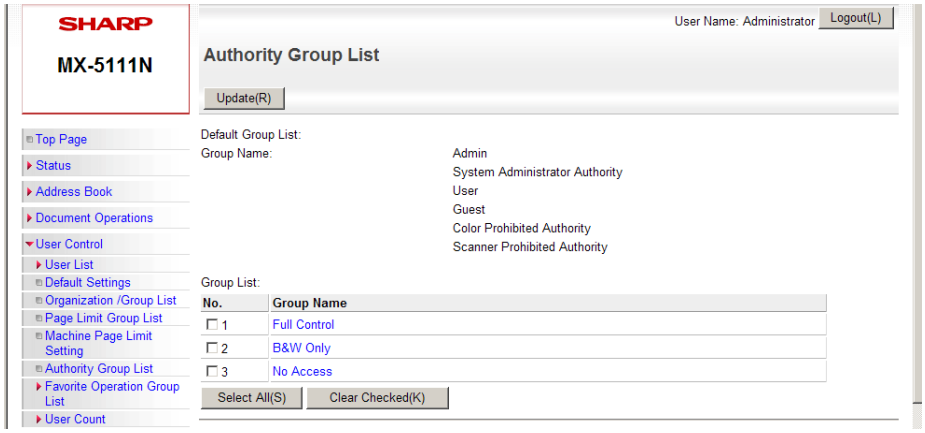
1. Navigate to the home page of the MFP.
2. Click on the Login button and login as the Administrator.
3. Click on User Control on the left hand menu item and then click on the Authority Group List sub menu.
4. Click on the Add button and the new Authority Group Registration screen will appear.



5. Name the Authority Group Full Control and select User as the registration model. Click on the Submit button when done.



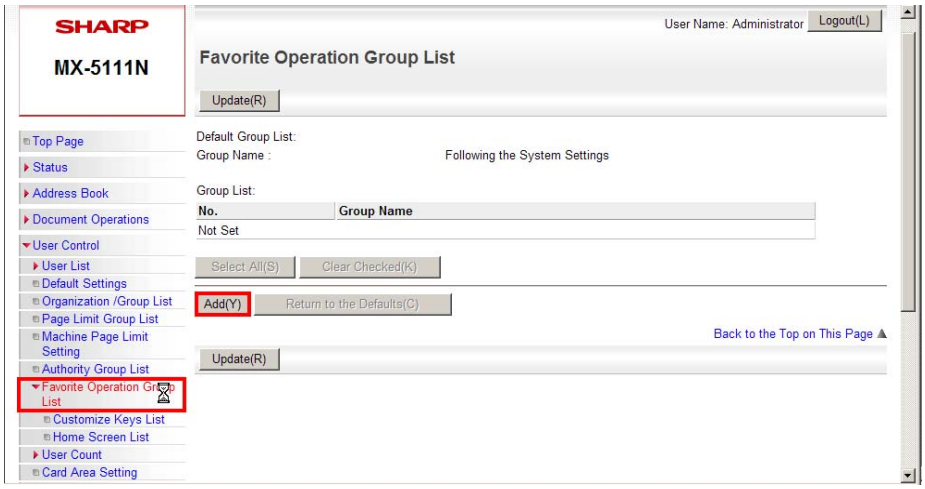
6. Next, add another Authority Group naming it B&W Only and select Color Prohibited as the registration model. Click on the Submit button.
7. Finally, add another Authority Group naming it No Access and select Guest as the registration model. Select Prohibit for all functions on this page and click on the Submit button when done. The Authority Group List should appear as below.



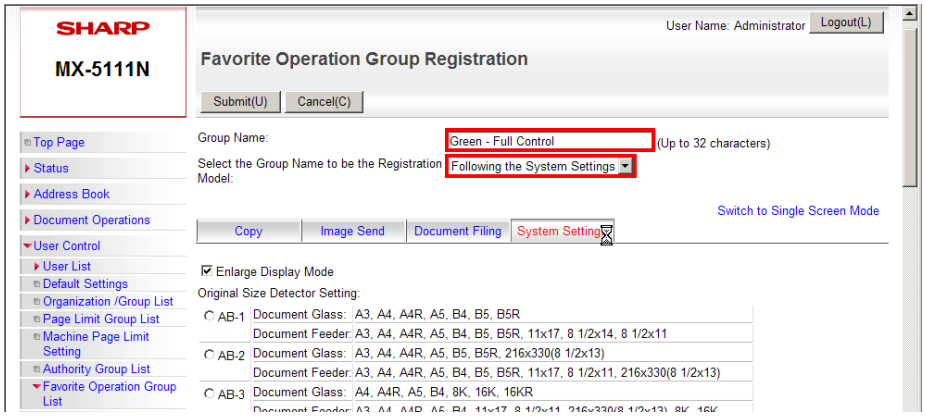
B. Create Favorite Operation Groups

While numerous changes can be made for a Favorite Operation Group, only the screen background colors will be changed in this example.

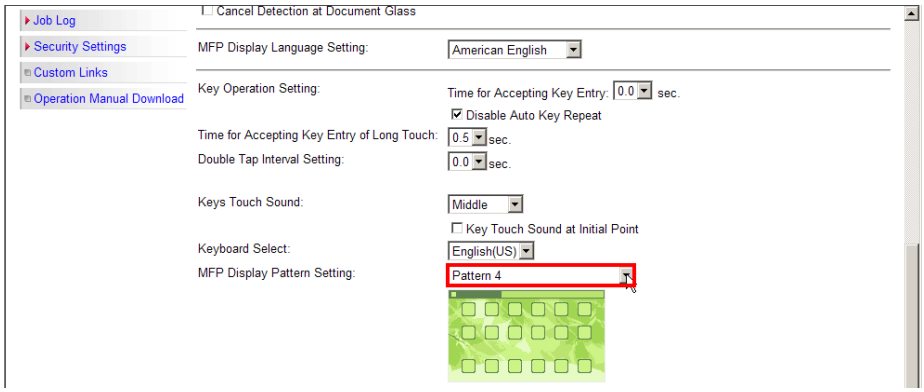
1. Click on User Control on the left hand menu item and then click on the Favorite Operation Group List sub menu.



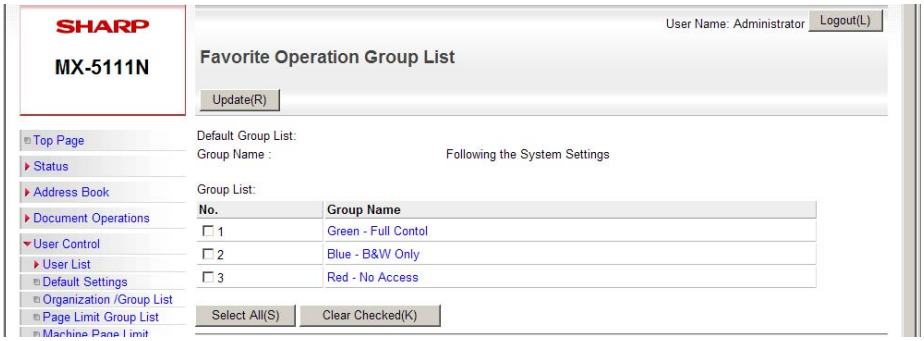
2. Click on the Add button and the new Favorite Operation Group Registration screen will appear. Name this group Green – Full Control and click on the System Settings tab.



3. Scroll down the page to the MFP Display Pattern Settings and select Pattern 4 (green background) from the drop down box and click on the Submit button.



4. Next, add another Favorite Operation Group, name this group Blue – B&W Only and then click on the System Settings tab. Scroll down the page to the MFP Display Pattern Settings and select Pattern 2 (blue background) from the drop down box and click on the Submit button.
5. Finally, add another Favorite Operation Group, name this group Red – No Access and then click on the System Settings tab. Scroll down the page to the MFP Display Pattern Settings and select Pattern 6 (red background) from the drop down box and then click on the Submit button. The Favorite Operation Group List should now appear as shown on the next page.



C. Create Custom LDAP Server on the MFP

1. Click on Network Settings on the left hand menu item and then click on the LDAP Settings sub menu.
2. Click on the Add button and the new Global Address Book Settings screen will appear.
3. Enter the name to use for this address book, the LDAP search root and the IP address or DNS name of the LDAP server.

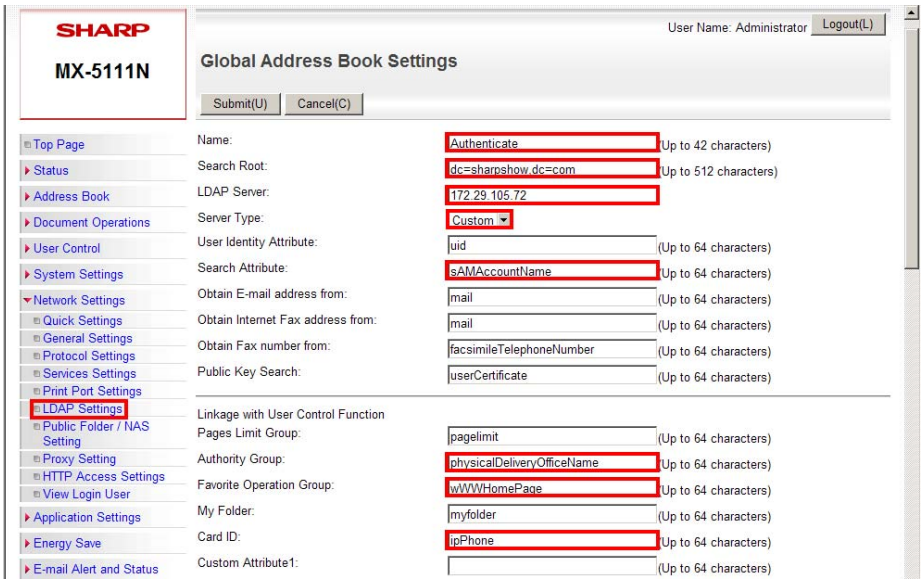
   NOTE: It is important that the Search Root field has at least the domain root path entered. If this field is left blank, authentication can be done but the Linkage with User Control Function will not be applied.
4. Change Server Type from Standard to Custom so that that the default attributes fields can be edited.

   NOTE: LDAP attributes must be capitalized and spelled exactly as shown or the Linkage with User Control Function will not be applied.
5. As this address book will be used for authentication only, change the Search Attribute field from cn to sAMAccountName. This attribute returns the user's logon name rather than his first and last name from the cn attribute.

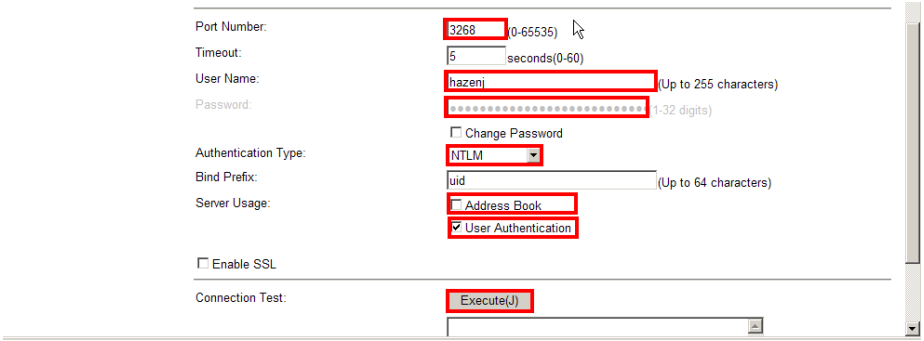
   NOTE: This is important as the user account is auto created on the MFP when the user logs on for the first time at the MFP. When printing, the user must supply his logon name (sAMAccountName) and password. If the default cn attribute is used in the custom LDAP setup, two accounts for the same user will be created. As an example, if the user's cn attribute is Don Clark and his logon name is clarkd, two users accounts will be created on the MFP – *Don Clark and *clarkd.
6. It is assumed that the following user attributes were available for use with the Linkage with User Control Function:
   a. physicalDeliveryOfficeName (Displayed as Office on user's General tab in Active Directory Users and Computers)

b. wWWHomePage (Displayed as Web page on user's General tab in Active Directory Users and Computers)
c. ipPhone (Displayed as IP phone on user's Telephone tab in Active Directory Users and Computers)

7. Under the Linkage with User Control Function, type in physicalDeliveryOfficeName in the field for Authority Group, wWWHomePage in the field for Favorite Operation Group and ipPhone in the field for Card ID.


SHARP
MX-5111N
User Name: Administrator
Logout(L)
Global Address Book Settings
Submit(U)
Cancel(C)
Top Page
Status
Address Book
Document Operations
User Control
System Settings
Network Settings
Quick Settings
General Settings
Protocol Settings
Services Settings
Print Port Settings
LDAP Settings
Public Folder / NAS Setting
Proxy Setting
HTTP Access Settings
View Login User
Application Settings
Energy Save
E-mail Alert and Status
Name: Authenticate (Up to 42 characters)
Search Root: dc=sharpshow,dc=com (Up to 512 characters)
LDAP Server: 172.29.105.72
Server Type: Custom
User Identity Attribute: uid (Up to 64 characters)
Search Attribute: sAMAccountName (Up to 64 characters)
Obtain E-mail address from: mail (Up to 64 characters)
Obtain Internet Fax address from: mail (Up to 64 characters)
Obtain Fax number from: facsimileTelephoneNumber (Up to 64 characters)
Public Key Search: userCertificate (Up to 64 characters)
Linkage with User Control Function
Pages Limit Group: pagelimit (Up to 64 characters)
Authority Group: physicalDeliveryOfficeName (Up to 64 characters)
Favorite Operation Group: wWWHomePage (Up to 64 characters)
My Folder: myfolder (Up to 64 characters)
Card ID: ipPhone (Up to 64 characters)
Custom Attribute1: (Up to 64 characters)

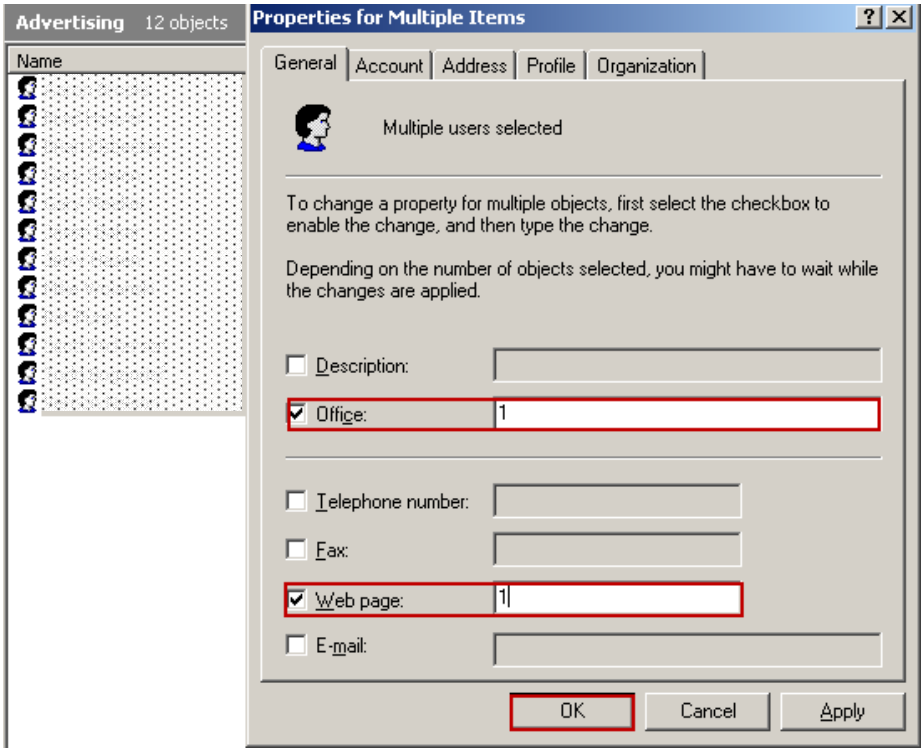
8. Complete the port number with the default LDAP port of 389 or the Global Catalog port of 3268, the LDAP user name and password and authentication type as needed for the network. For Server Usage, uncheck the box for Address Book and check the box for User Authentication. Press the Execute button for Connection Test. If there are no problems, click the Submit button to save the settings.



D. Update user attributes in Active Directory

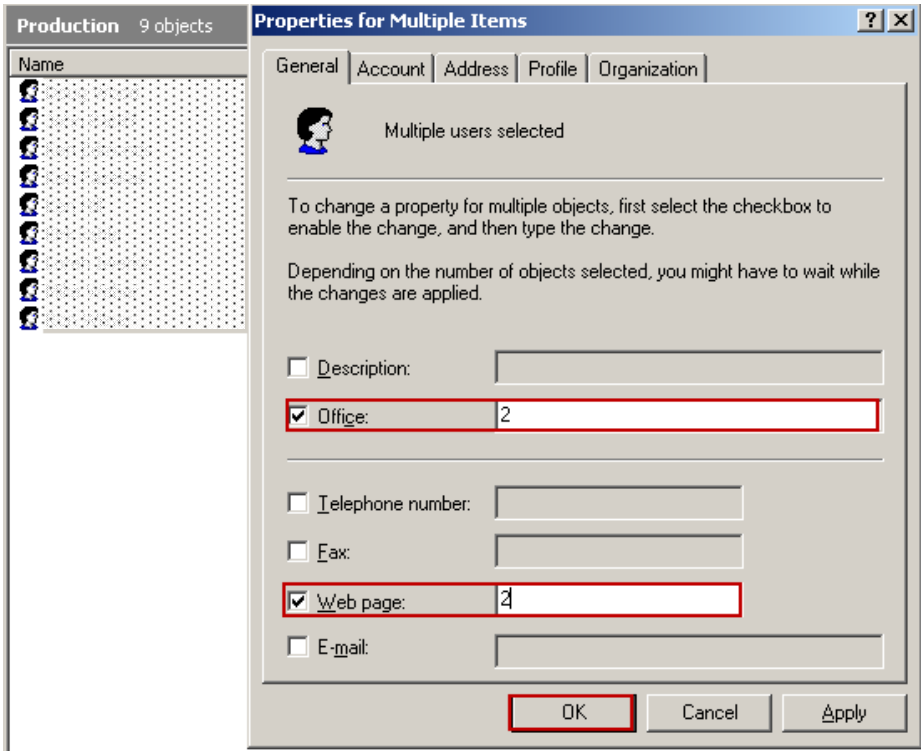
NOTE: The following steps should be performed by a qualified Network Administrator. The Active Directory structure used for this example places users in organizational units that correspond to their job functions. MFP permissions will be based on these organizational units. Users in the Advertising and Managers organizational units will have permissions to use all functions of the MFP and can print in color or black and white. Users in the Production unit can also use all functions of the MFP but can only print in black and white mode. Users in the Temporary unit will not be allowed to use any MFP function.

1. On the Domain Controller, open the Active Directory Users and Computers administrative tool.
2. Expand the Advertising ou and highlight all users. Right click, select Properties and click on General tab. Click on the check boxes next to Office and Web page. Place a 1 in the Office and Web page fields and then click on OK. All users in this unit will now belong to the Full Control authority group and the Green – Full Control favorite operations group when they log in at the MFP.



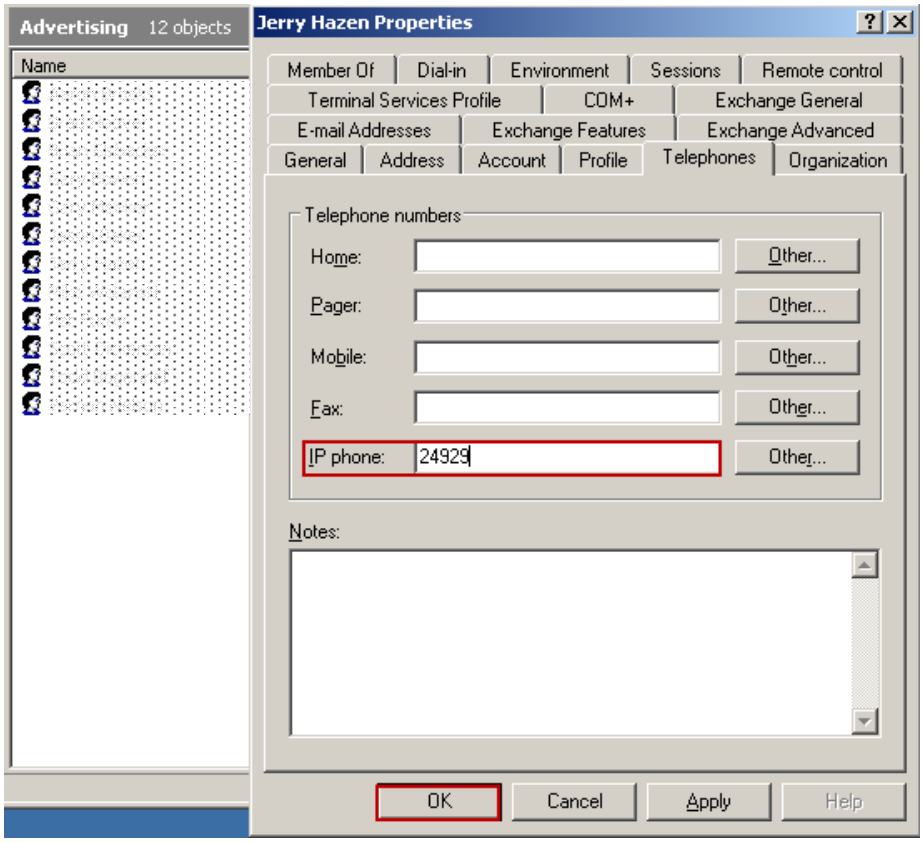
3. Repeat for the above for the users in the Managers ou as they will have the same authority and favorite operations groups assigned to them.

4. Expand the Production ou and highlight all users. Right click, select Properties and click on General tab. Click on the check boxes next to Office and Web page. Place a 2 in the Office and Web page fields and then click on OK. All users in this unit will now belong to the B&W Only authority group and the Blue – B&W Only favorite operations group.



5. Expand the Temporary ou and highlight all users. Right click, select Properties and click on General tab. Click on the check boxes next to Office and Web page. Place a 3 in the Office and Web page fields and then click on OK. All users in this unit will now belong to the No Access authority group and the Red - No Access favorite operations group.

6. Next, users assigned with HID cards that are to be given access to the MFP must have their HID card number added to their user attributes. In the Active Directory Users and Computers tool, right click on the user name to add a card to and select Properties. Click on the Telephones tab and fill in the IP phone field with the number contained on the HID card. Click on OK when done.



7. Repeat for each user who will have access to the MFP keeping in mind that a card can only be registered to a single user.

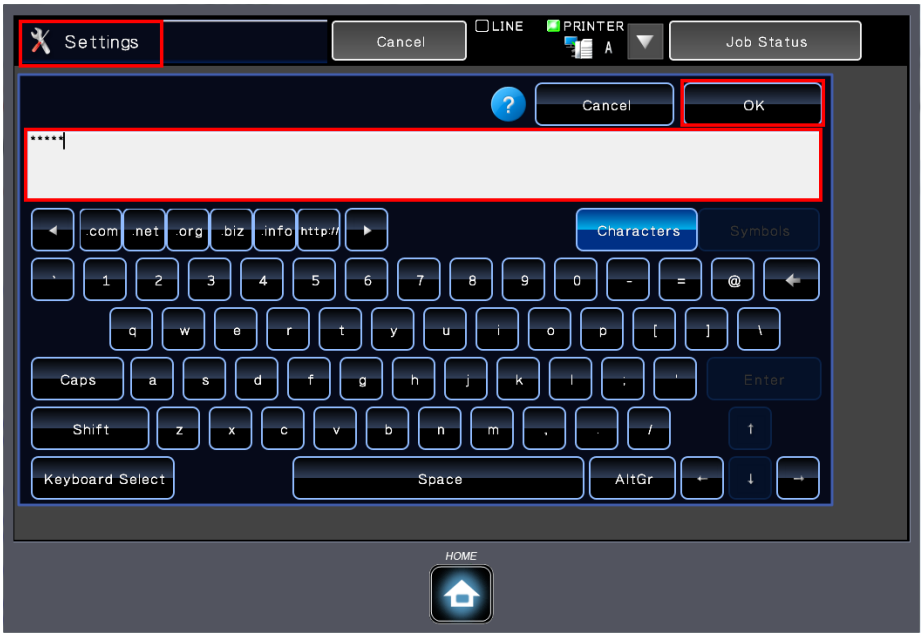
E. Install the Card Reader to the MFP and enable User Control.

All that remains to implement this solution is to install the HID card reader on the MFP and set the authentication method to HID card only. The following

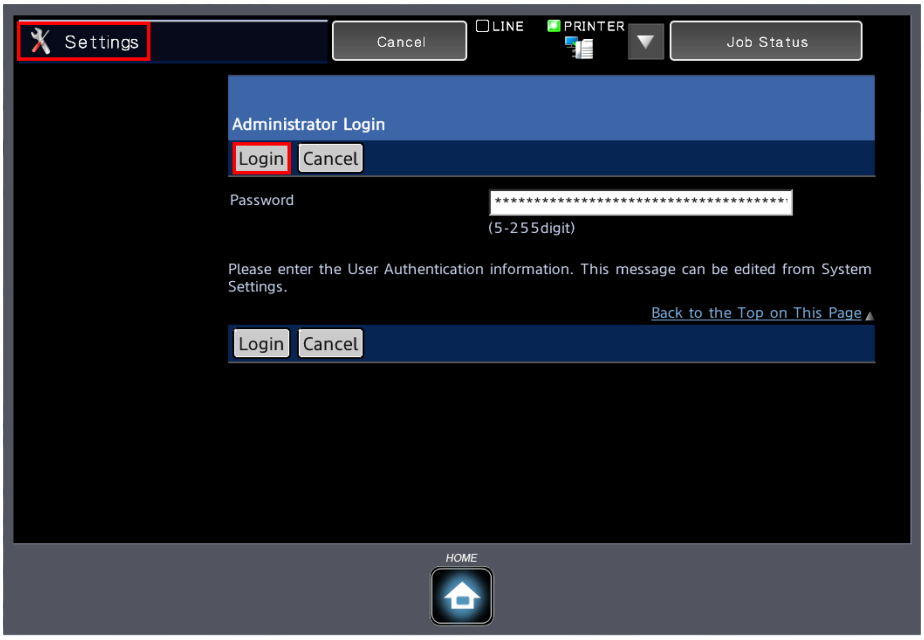
1. At the MFP, press the Settings button on the Home screen of the display.

2. At the Settings screen, press the Administrative Login button.

3. When the following screen appears, type in the administrator password (default admin) and then press the OK button.

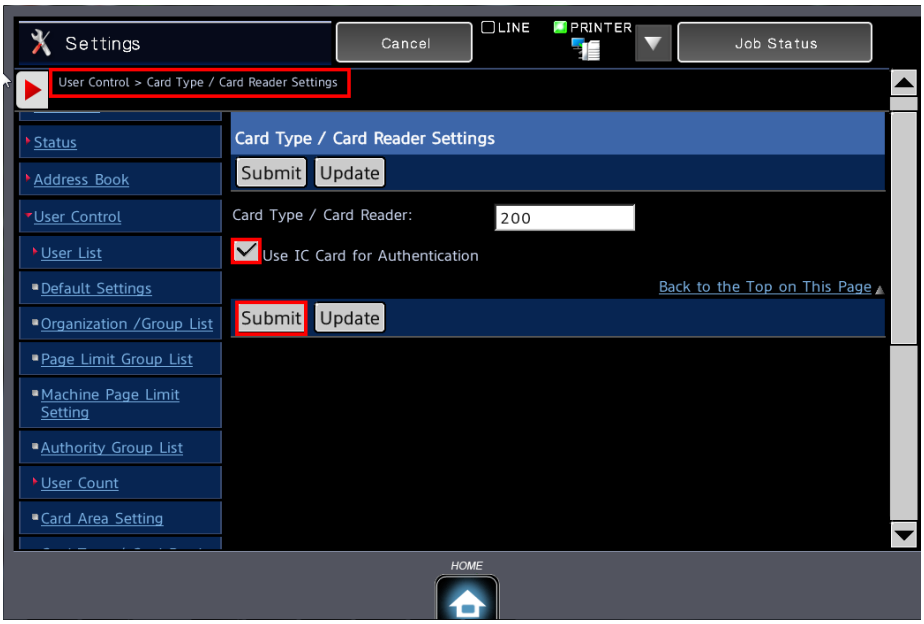


4. Press the Login button.

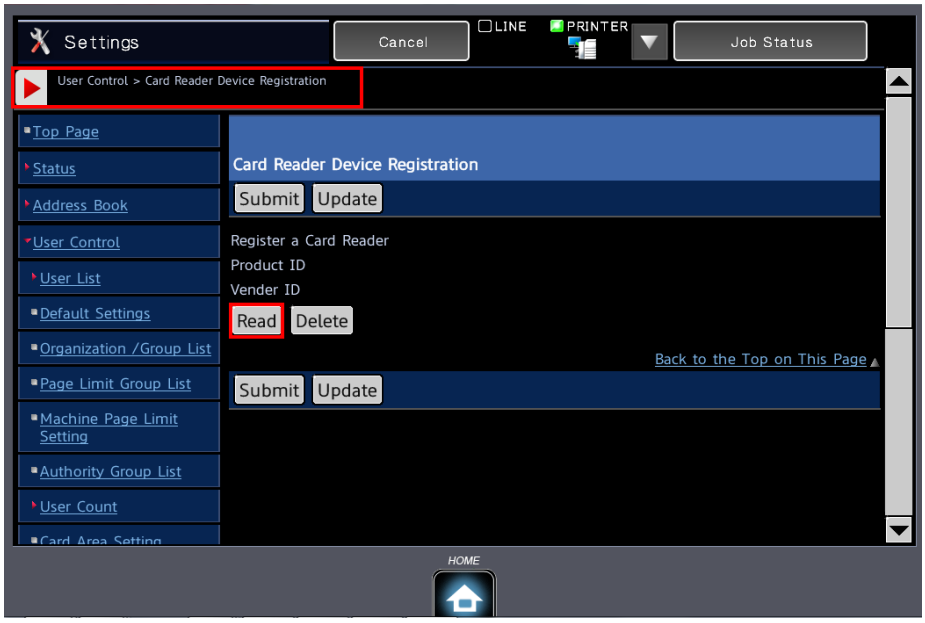


5. When the Settings screen reappears, click on the User Control menu to expand it and then click on Card Type / Card Reader Settings.

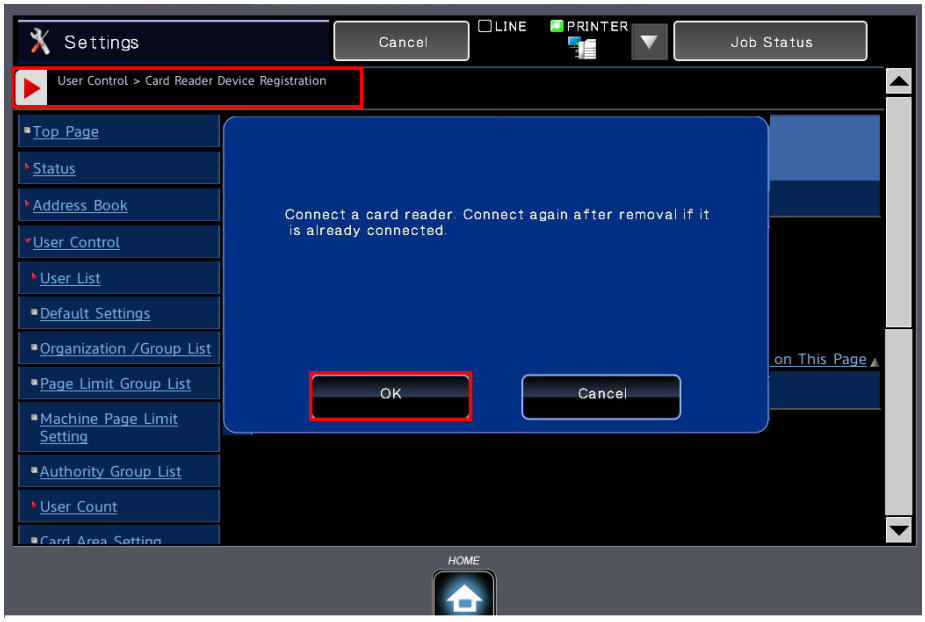
6. Click on the checkbox for Use IC Card for Authentication and then press the Submit button.



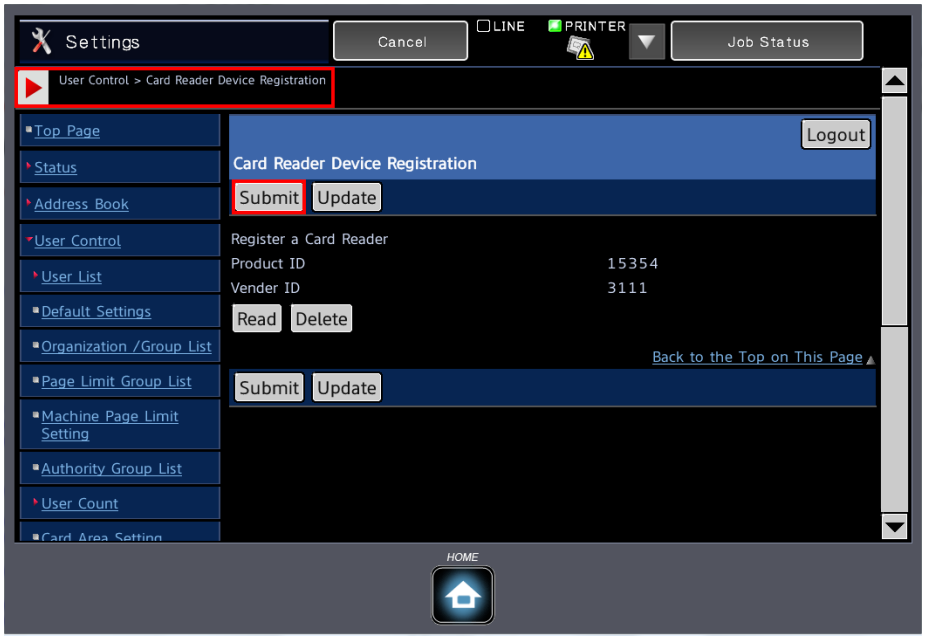
7. Scroll down under User Control, select the Card Reader Device Registration menu item and then click on the Read button.



8. When the following message appears, insert the USB cable from the HID card reader into the USB connector of the MFP and then press the OK button.

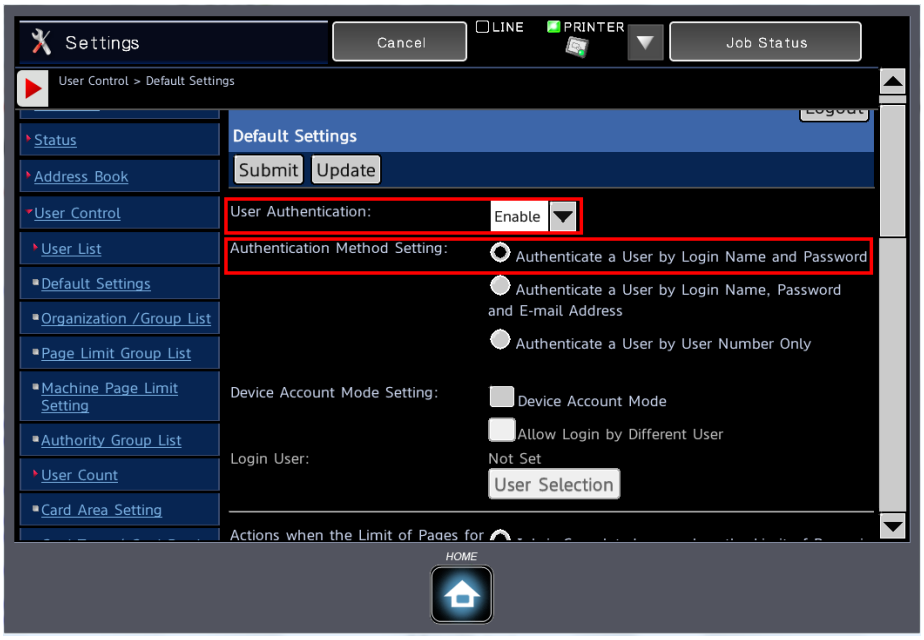


9. After a few moments, the Product ID and Vendor ID fields will be populated with the values from the card reader. Click on the Submit button after this occurs.

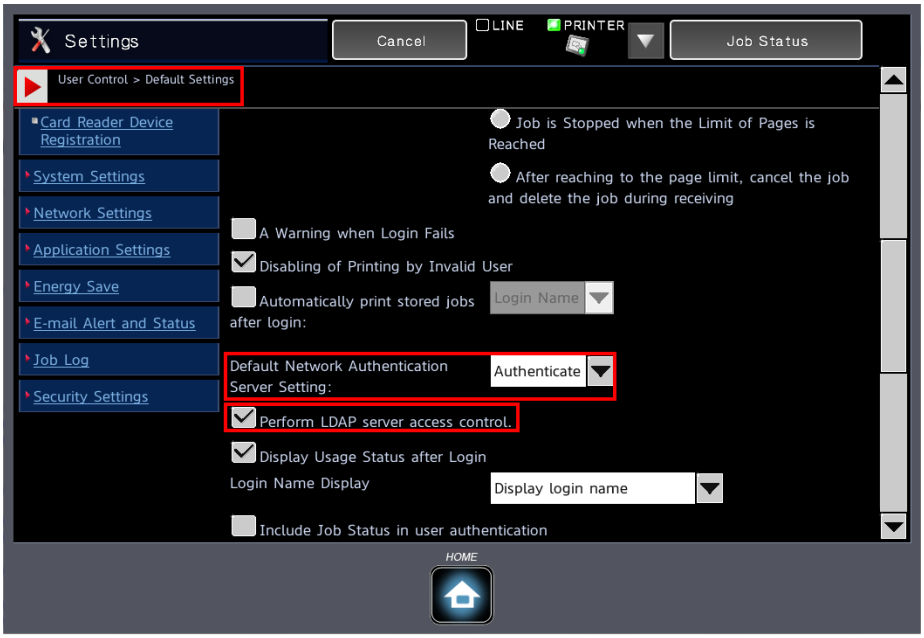


10. Under User Control select Default Settings menu item.

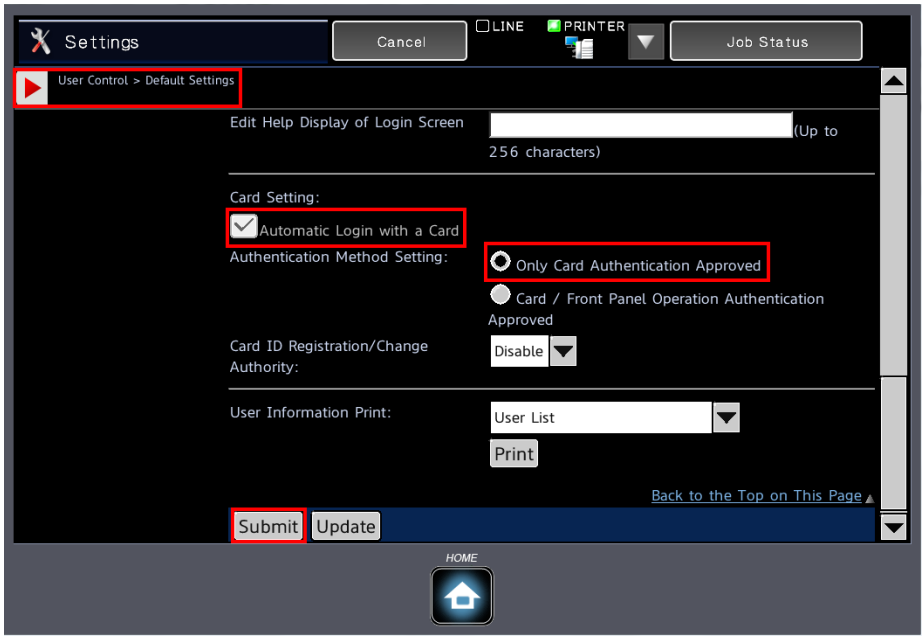
11. Select Enable from the drop down list for User Authentication and leave the Authentication Method Setting at the default as shown.



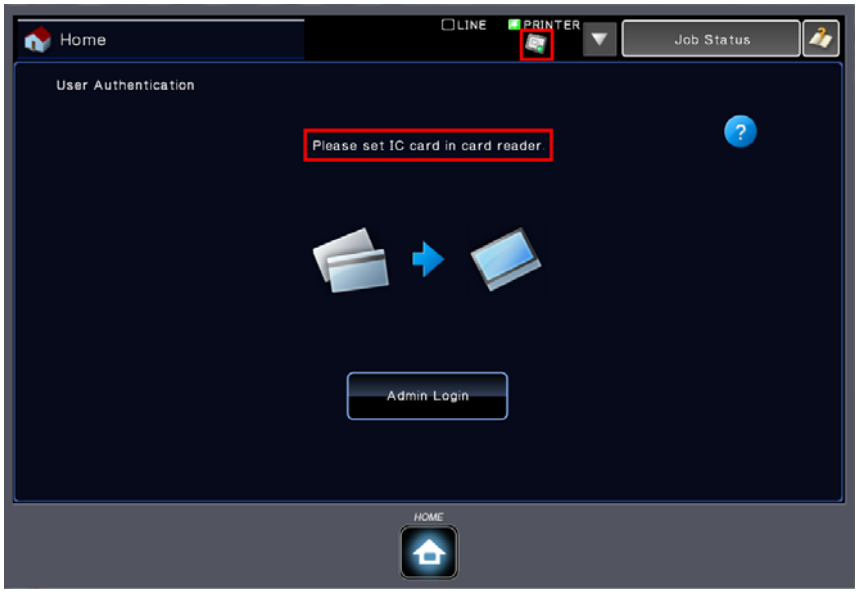
12. Scroll down and select the LDAP server created for use as the authentication server from the drop down list. Check the box next to Perform LDAP server access control and any other desired options on this screen.



13. Scroll down to the last screen, click on the box next to Automatic Login with a Card and click on the radio button for Only Card Authentication Approved. Click on the Submit button when done.



14. The Home screen will then be displayed as shown below and only users with their HID cards registered in Active Directory or the MFP administrator can log into the MFP. Their permissions to use the MFP functions will be restricted by the Authority Group that was assigned to them in Active Directory as shown on Pages 2 and 3 of this document.



MFP

TT-20414

TECHNICAL TIP

Models:
MX-2310U/MX-3111U
MX-2600N/MX-3100N
MX-4100N/MX-4101N/MX-5001N
MX-2610N/MX-3110N/MX-3610N
MX-4110N/MX-4111N/MX-5110N/MX-5111N
MX-M264N/MX-M314N/MX-M354N
MX-M283N/MX-M363N/MX-M453N/MX-M503N
MX-M623N/MX-M753N

Priority: Medium

Date: April 2012

Subject: **Automatically Print Stored Jobs**

Description: How to automatically print jobs when logging into the MFP.

Details: Follow these instructions to set up automatic printing using job retention.

Note: For the purposes of this document it is assumed that the technician knows how to send print jobs to Document Filing and set up User Control on the MFP.
If print jobs are password protected or if they are in a folder that is password protected they will not be printed automatically.

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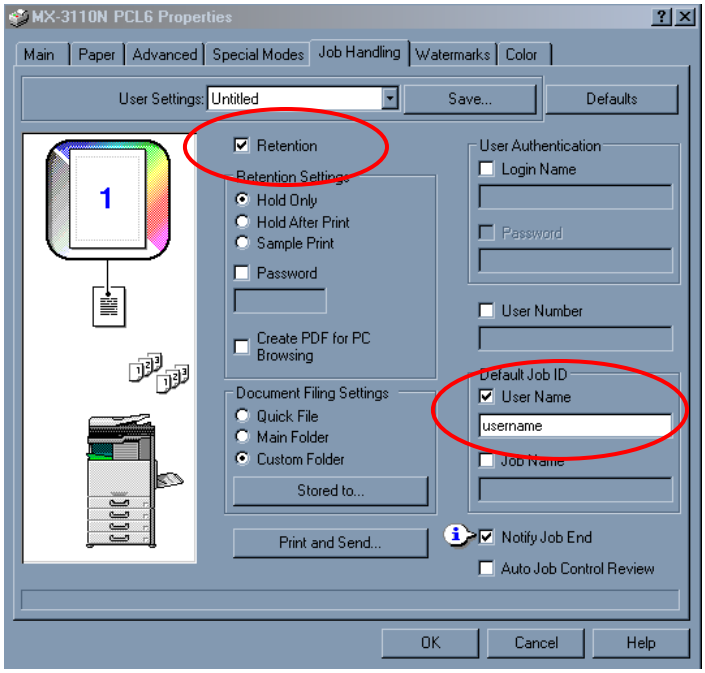
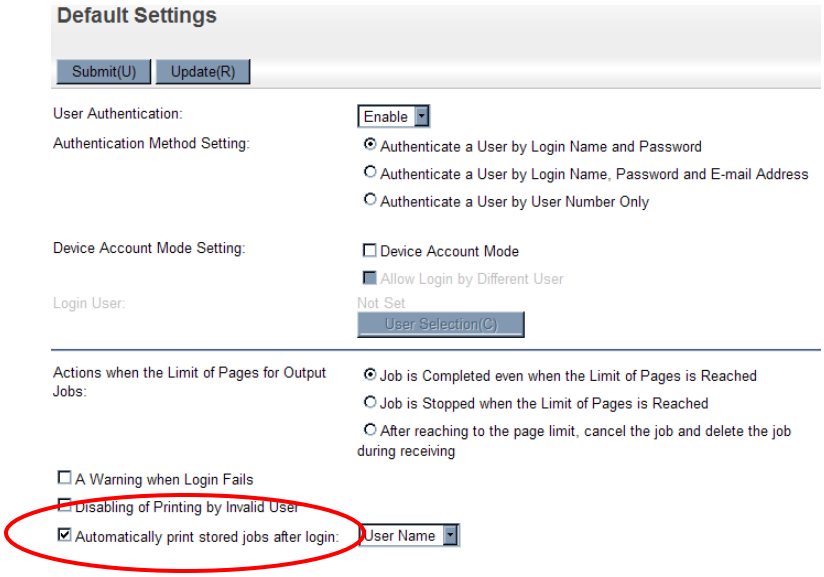
When User Control is enabled and printing using Retention under the Job Handling tab of the print driver preferences, jobs can be set to print automatically when logging in.

The user name for the job goes into the Default Job ID field. If the User Name box is checked and the field is filled out, this will be the user name associated with the print job. If the MFP is in a domain environment and the box is unchecked the print job will use the domain login name of the user logged in and printing.



In the MFP web page navigate to User Control, Default Settings. Check the box for Automatically print stored jobs after login then submit.


Default Settings
Submit(U)
Update(R)
User Authentication:
Enable
Authentication Method Setting:
Authenticate a User by Login Name and Password
Authenticate a User by Login Name, Password and E-mail Address
Authenticate a User by User Number Only
Device Account Mode Setting:
Device Account Mode
Allow Login by Different User
Login User:
Not Set
User Selection(C)
Actions when the Limit of Pages for Output Jobs:
Job is Completed even when the Limit of Pages is Reached
Job is Stopped when the Limit of Pages is Reached
After reaching to the page limit, cancel the job and delete the job during receiving
A Warning when Login Fails
Disabling of Printing by Invalid User
Automatically print stored jobs after login:
User Name

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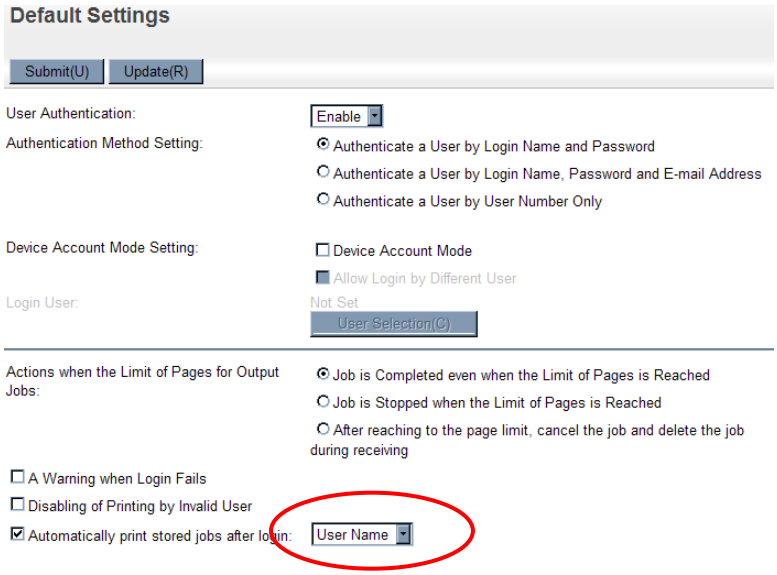
If using LDAP authentication, there is no need to create users under the user list. Leave the Default Job ID box unchecked in the print driver. Send jobs into Retention from the print driver, then log in at the MFP panel using the user's domain login and the user will be prompted to print their stored jobs.

Please note that if the files are password protected or if they are in a folder that is password protected they will not be printed.

If PC is not in a domain environment then the following will be needed in addition to the above:

Add a user to the User List in the MFP web page. Fill out required information and make note of the User Name field.
In the print driver at the PC under Print Preferences, Job Handling tab check the box for Default Job ID and use the same User Name that was added to the web page.
Then at the MFP, log in and the MFP will be prompted to auto print once logged in. Please note that if the files are password protected or if in a folder that is password protected they will not be printed

Please note that on newer model MFPs next to the check box for Automatically print stored jobs after login there is a dropdown with the option to choose Login Name or User Name. Select User Name for this to work if the Default Job ID box in the print driver is unchecked.


Default Settings
Submit(U)
Update(R)
User Authentication:
Enable
Authentication Method Setting:
Authenticate a User by Login Name and Password
Authenticate a User by Login Name, Password and E-mail Address
Authenticate a User by User Number Only
Device Account Mode Setting:
Device Account Mode
Allow Login by Different User
Login User:
Not Set
User Selection(C)
Actions when the Limit of Pages for Output Jobs:
Job is Completed even when the Limit of Pages is Reached
Job is Stopped when the Limit of Pages is Reached
After reaching to the page limit, cancel the job and delete the job during receiving
A Warning when Login Fails
Disabling of Printing by Invalid User
Automatically print stored jobs after login:
User Name

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MFP

TT-20422R

TECHNICAL TIP

Models:	MX-M283N/MX-M363N/MX-M453N/MX-M503N MX-M363U/MX-M453U/MX-M503U MX-M623N/MX-M753N MX-M623U/MX-M753U
Priority:	Medium
Date:	May 2012
Subject:	**Procedure to Resolve U2-30 Error Code**

Symptom: U2-30 Code on display panel on MFP.

Cause: At power on, the MFP must identify its 8 digit serial number. The serial number is electronically stored in 2 locations, on EEPROMs located On MFP Control PWB and the PCU PWB. If the MFP fails to identify identical serial numbers in both locations at power on, U2-30 error will occur.

Solution: Follow the troubleshooting procedure on the following pages. If U2-30 cannot be resolved, call the Hotline to open a case for this issue.

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Troubleshooting:

1. Try to reset the U2-30 error by executing Simulation 16.
2. The electronic serial number data stored on an EEPROM located on the MFP control PWB (ICU) and the electronic serial number data stored on an EEPROM located on the PCU PWB (PCU) must match the actual serial number tag on the left side of the machine. Both electronic serial numbers MUST match the Serial tag! No exceptions!
3. On the above models, it is no longer possible to view the serial number data in special simulations. Go to simulation 22-05 and confirm if the serial number is shown on the screen. This serial number is reported by the PCU PWB EEPROM. If the electronic PCU serial number matches the serial tag, then most likely there is an issue with the MFP control PWB EEPROM. There is no method available to view the electronic MFP control PWB EEPROM serial number on the above models.
4. Serial Numbers may not match for the following reasons:
   - MFP Control or PCU PWBs have been swapped with other machines. Whenever the MFP or PCU PWB are removed or replaced, the EEPROMs must be removed and installed onto the replacement PWB. No exceptions!
   - Damage. Great care must be given not to damage the 8 legs on the EEPROMs during removal or installation. It is recommended to use an EEPROM removal tool.
   - EEPROMs installed in wrong PWB. It is critical that the PCU EEPROM is never installed on the MFP PWB or vice versa. The data on the EEPROMs could be permanently damaged. Before removing the EEPROMs, please label or mark the EEPROMs in some manner to ensure you install them on the correct replacement PWB.
   - EEPROMs installed backwards. There is an indentation or dimple at one end of the EEPROM indicating its correct orientation. There is a white outline drawn around the EEPROM on the PWB with a notch at one end indicating which way the dimple should go. Please note which direction the dimple faces before removing the EEPROM. The data on the EEPROMs could be permanently damaged.
   - Voltage surge. Power surges could also damage the EEPROMs.
5. If you are able to resolve a serial number mismatch, try to reset with Simulation 16 again.
6. Confirm that no EEPROM legs are broken or partially seated.
7. Confirm EEPROMs are on the correct PWB (If Possible)
8. Try running Simulation 16 one last time to reset.

If all efforts to correct U2-30 error fail, the EEPROMs will have to be sent to the factory to reprogram the serial number information. This involves a minimum 2 week turnaround time. It is vital that the following directions be followed TO THE LETTER, or additional delays will occur.

Step 1) Call the hotline and set up a case number (this is needed for tracking purposes). The hotline will also attempt to help you correct the serial number conflict if possible to avoid delays in getting the customers down machine up and running. They will also go over necessary information, such as packaging instructions, documentation, and components that must be sent in to Sharp. Please cooperate with the hotline personnel. They are there to help you.

Step 2) Documentation: To avoid delays, the following documentation is required by the factory in order to restore serial number information. There are no exceptions.

- A photo of the serial number tag on the frame of the MFP
- A copy of the invoice from Sharp when the machine was purchased. If you did not purchase the MFP directly from Sharp, please contact the Dealer that did.
- Please include a note that clearly shows the case number you received in Step 1.

Step 3) Original Components: To avoid delays, the following components must be sent to the factory in order to restore serial number information. There are no exceptions.

- MFP Control PWB EEPROM
- PCU PWB EEPROM

Important notes:

- Before removing each EEPROM, make a note of which direction the dimple is facing. It is critical that the replacement EEPROM is installed in the correct orientation.
- Before removing each EEPROM, Mark or label each EEPROM. Sharp will NOT be able to identify which EEPROM came from which PWB. You must label them.
- EEPROMs must be protected by placing the legs of the EEPROM in anti-static foam.
- NEVER ship EEPROMs in an Envelope!

Step 4) Replacement Components: To avoid delays, the following replacement components must be sent to the factory in order to restore serial number information. There are no exceptions.

- MFP Control PWB EEPROM
- PCU PWB EEPROM

Step 5) Packaging: To avoid delays, please take care that all components are packaged properly and are well protected. All electronic components must be wrapped in anti-static material. Also take care to label the package Ship To: information correctly.
Always ship EEPROMs in a carton, never ship EEPROMs in an envelope.

Step 6) Shipping: Please send the Documentation, Original Components, and Replacement Components in a carton to the following address:

Sharp Electronics Corporation
DSSD Dept. ATTN: TY SMITH
1300 Naperville Drive, Romeoville, IL 60446

Warning:

- Include DSSD Dept. ATTN: TY SMITH, or else the package may not reach the intended recipient for several days.
- Never ship the components in an envelope, or else severe damage will occur.
- Protect the legs of the EEPROMs in anti-static foam, or else severe damage will occur.
- Wrap the components in anti-static plastic, or else severe damage will occur.
- Do not forget to include all documentation outlined in Step 2.

Factory will analyze the original components to identify root cause of U2-30 error.
Serial number Data will be programmed onto Replacement components, and tests will be made to confirm that the U2-30 has been eliminated.
Original components will be destroyed.

Addendum

Replacement Parts: Please be aware that the part numbers for the EEPROMs are only provided in the PWB Parts Guide.

For MX-M283/MX-M363/MX-M453/MX-M503:

PWB Parts Guide (EEPROMs):

MFP (ICU) EEPROM:
Section 2, Item 183 (IC 29)
Old Part Number: VHIAT24256P-1
New Part Number: VHIBR24256W-1
PCU EEPROM:
Section 7, Item 18 (IC 31)
Old Part Number: VHIAT24C64P-1
New Part Number: VHIBR24T64W-1

For MX-M623/MX-M753:

PWB Parts Guide (EEPROMs):

MFP (ICU) EEPROM:
Section 3, Item 154 (IC 26)
Part Number: VHIAT24256P-1

PCU EEPROM:
Section 2, Item 16 (IC 47)
Part Number: VHIAT24C64P-1

Note: Part Numbers Subject to change (Always refer to Main Parts Guide and PWB Parts Guide posted on IDNC for latest information).
As of March, 2012, Interchangeability for EEPROMs is rated as 1. If the new part number is not available, use the old part number.